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# EMINENT DOCTORS.

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# EMINENT DOCTORS:

## Their Lives and their Work.

BY

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"There is to me an inexpressible charm in the lives of the good, brave, learned men, whose only objects have been, and are, to alleviate pain and to save life."
—G. A. SALA.

*IN TWO VOLUMES.*

VOL. II.

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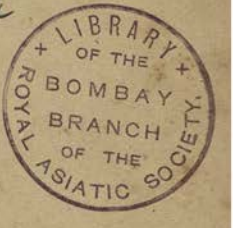


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# EMINENT DOCTORS.

## CHAPTER XI.

### *ADDISON, BRIGHT, AND THE DISEASES WHICH BEAR THEIR NAMES.*

OPERATIVE dexterity, as was natural, arrived more quickly at perfection than did medical treatment. In fact, no one will pretend that medicine has yet travelled far, in comparison with its future achievements, when physiology, pathology, and therapeutics shall have become more complete. THOMAS ADDISON is a specimen of the physicians of genius who have adorned this century. He is known as the discoverer of a disease which bears his name; but his true fame rests upon his practical talent in diagnosing disease.

Dr. Lonsdale, in his volume of "Worthies of Cumberland," issued in 1873, shows that Addison sprang from the ranks of the yeomanry of Cumberland, and that his forefathers resided during the Commonwealth at "The Banks," in the parish of Lanercost. Thomas Addison, born in 1636, and Mary his wife, have left their initials carved on an old oaken settle still pre-

served at The Banks, inscribed with the injunction, "When God doth thee in store, remember thou the poor." One of his descendants was a Samuel Addison, who became a doctor of medicine, but died at the age of thirty-four. Thomas Addison, a nephew of his, was born in April 1793, at Longbenton, near Newcastle-on-Tyne, where his father was in business, though he retained his farm at The Banks, where his wife lived for the most part. Young Addison clung greatly to the ancestral home, and many years afterwards assembled his wedding guests there. It is on the very site where the Romans encamped during the building of the wall to the Solway Firth; it overlooks the medieval Priory of Lanercost; near by is Naworth, the old Border castle of "Belted Will Howard."

Thomas Addison was educated at the Newcastle grammar-school under the Rev. E. Moises, and there became a masterly Latin scholar, so that he afterwards took his lecture notes in Latin at Edinburgh. He went direct from school to Edinburgh University, declining to enter as a pupil with an Edinburgh doctor, as his father desired. He was no ordinary student. Independent in thought and action, he was soon recognised by the Royal Medical Society, and made one of its presidents in 1814, an honour which Marshall Hall, and Richard Bright his subsequent colleague, also attained about that time. A striking fact it is that three of the first names of great English physicians of this century should be Edinburgh students, and

Presidents of the same Medical Society there. But as yet the London medical schools were only in embryo.

Addison took his M.D. degree in 1815, and afterwards, it is believed, visited the Continental schools; but of this there is no certain evidence. He soon settled in London, in Skinner Street, Snow Hill, in one of the so-called haunted houses. He knew but one man, an old fellow-student, in London. Yet he received nearly sixty guineas in his first year of practice, a very considerable success. He became House Surgeon to the Lock Hospital; then Physician to the General Dispensary, where he studied skin diseases with Bateman. This appointment he held for eight years, and it was of essential service to him. He manifested a keen eye for generic distinctions and individual varieties, and might probably have succeeded to Bateman's position in regard to skin diseases. But he was not to be made into a specialist. As Dr. Lonsdale says, "with Addison the investigation of any disease meant the full exercise of his abilities till he had mastered it, and having done this, he could not rest till he broke up fresh ground for tillage." He dreaded becoming a specialist; it savoured of quackery. He always held that the true physician must understand surgery well; and that the good surgeon must know the principles of medicine.

In 1819 or 1820 commenced Addison's association with Guy's. He early attracted the attention of the energetic and discerning treasurer, Mr. Harrison, then

the beneficent despot of Guy's, and was by him appointed Assistant-Physician in 1824. This was a victory for unconventional procedure, for it had always been the custom to appoint men at Guy's who had been original pupils, and not to receive men who were already qualified and in practice into the charmed circle. It was soon evident that a great practical physician had joined the hospital staff, and he was further recognised in 1827 by receiving the lectureship of Materia Medica. Here his attractive powers were made evident by the large classes he drew around him, at a period when medical students entered for individual courses of lectures, and did not as a rule take the whole of their instruction at one school. He must have received between £700 and £800 from these lectures in some years. Men felt that he was the man to sustain and increase the fame of Guy's.

In 1829 Dr. Addison published, in conjunction with John Morgan, Surgeon to Guy's, an essay on "The Operation of Poisonous Agents on the Living Body." Strange to say, this was the first serious investigation in England into the phenomena of general poisoning. The authors believed that a direct influence on the nerve filaments distributed to the blood-vessels accounts for the rapid effects of some of them. In 1830, Addison published a pamphlet on some disorders of females, vigorously combating some received notions, and objecting to the system of depletion. In concluding a lengthy lecture to his class on this subject, he showed

the sentiments which animated him by the following remarks: "Gentlemen, if you require an apology for detaining you so long, I find ample material for that apology in the lively interest in which we must all feel in the comfort and happiness of the other sex, doomed as they are, both by the decrees of Providence and by human institutions, to drink deep of the bitter cup of suffering. Whatever may be her lot in this world, we, as men, must at least acknowledge that, whilst Infinite Power gave us being, Infinite Mercy gave us women."

In 1837 Addison was elected full Physician to the Hospital, and was appointed joint-lecturer with Dr. Bright on Medicine. About this time he commenced with his colleague the "Elements of the Practice of Medicine," of which the first volume only appeared, chiefly written by Addison. It was most highly valued, but neither author could be induced to complete it. Valuable monographs in number came from his rich experience: two on Pneumonia in 1837 and 1843; Observations on the Anatomy of the Lungs in 1840; the Pathology of Phthisis, 1845, in which he laid down the principle that inflammation constitutes the first instrument of destruction in every form of phthisis. This early advocacy of a doctrine which has thrown much light on this disease was strongly opposed by the physicians of his day, and stamped Addison as a powerful innovator. He was much impressed by Laennec's views, and acquired very great power of diagnosing from auscultation of the chest. Yet, candid

ever in confessing ignorance, he read a paper before Guy's Physical Society in 1846, "On the Difficulties and Fallacies attending Physical Diagnosis of Diseases of the Chest." Among other subjects, he dealt with Diseases of the Liver, Affections of the Skin, Disorders of the Brain connected with Diseased Kidneys, and "the Influence of Electricity as a Remedy in certain Convulsive and Spasmodic Diseases," in every case bringing together facts hitherto disconnected, and contributing markedly to advance medicine as a science.

The achievement of Dr. Addison, however, which has attracted most general notice, is his discovery of a disease of the supra-renal capsules, the small organs adjacent to the kidneys, whose function has not yet been satisfactorily ascertained. We are told that in one case, which had baffled all investigation, Addison was called in, and after careful enquiry, stated positively that the patient suffered from a disease of these organs, which would before long prove fatal. This opinion was received with polite incredulity, but it was justified by the result, and the supra-renal capsules were the only organs that were found diseased. This extraordinary diagnosis was soon noised abroad, and on the Continent brought Addison more honour than in England. Trousseau in France was cordially supported in naming it "la Maladie d'Addison" (Addison's disease), a name which it will long retain. But the disease was not discovered in this apparently sudden and striking manner, but was the result of observations carried on

for many years in which his powers of deduction from a few cases and imperfect data were most strikingly evidenced. The disease occurs rarely, and very few hints or materials for comparison were available. A form of wasting disease without any apparent organic injury had been again and again observed—bloodlessness, extreme prostration, and various shades of alteration in the colour of the skin, being prominent symptoms. A certain bronzing of the integument was, and still is, an inexplicable concomitant, and no light was thrown upon it till Addison, carefully examining the organs of a deceased patient, when no other disease could be detected, discovered signs of malady in the supra-renal capsules. He identified the disease, and though he did not absolutely mark it out from all others, he gave a very perfect account of the symptoms in the cases which he had met with, and showed that no other disease could be connected with them—indeed no other disease of these capsules has been discovered.

As a teacher Addison was impressive and popular. His interest in his class was genuine and unfeigned; he was eager to draw out the talents of his students. Among his pupils were Dr. Golding Bird, too early called from his brilliant career, Sir William Gull, Dr. Wilks, and many others of note. His clinical teaching in the wards was especially superior. He could most vividly illustrate on the patient, and most clearly define and demonstrate his disease. He disliked anything like interference with his methods by

others, and sometimes showed it somewhat brusquely. Once when he had been away from his wards for a few days, a colleague had seen reason to change his treatment of a case of pleurisy. On Addison's return, he at once inquired the reason, and was told that the physician in charge believed the case to be one of pneumonia and solidification of the lung. "Ah indeed!" said Addison, "give me a trocar;" and he immediately plunged the little instrument into the chest, and drew off a few ounces of fluid, proving the accuracy of his own diagnosis. He wasted no time in considering or discussing probabilities; he was certain, and he proved that he was right.

Dr. Wilks' view of Addison's character, in the collected edition of his works published by the New Sydenham Society, 1868, is so pertinent that it must find a place in any adequate account of Addison:—

"His strong, positive, and perpetual insistence upon the term 'practical,' in reference to disease, constitutes, indeed, the key to Addison's character and professional career. He was always ready to discuss newly-started theories, but he never for a moment allowed them to interfere with the results of his matured experience. Possessing unusually vigorous perceptive powers, being shrewd and sagacious beyond the average of men, the patient before him was scanned with a penetrating glance, from which few diseases could escape detection. He never reasoned from a half-discovered fact, but would remain at the bedside, with a dogged determina-

tion to track out the disease to its very source, for a period which constantly wearied his class and his attendant friends. So severely did he tax his mind with the minutest details bearing upon the exact exposition of a case, that he has been known to startle the 'sister' of the ward in the middle of the night by his presence; after going to bed with the case present to his mind, some point of what he considered important detail in reference to it occurred to him, and he could not rest till he had cleared it up. He has also been known, after seeing a patient within the radius of eight or ten miles, to have remembered on his near approach to London, thinking over the case on his way, that he had omitted some seemingly important inquiry, and to have posted back some miles for the purpose of satisfying his mind on the doubt which had occurred to it. If at last he could lay his finger on the disease, his victory was attained, and his painstaking satisfactorily rewarded. For with him accurate diagnosis was the great, and too often the ultimate object of an industry of search, a correlation of facts deduced from scientific observation, and a concentration of thought rarely combined in the individual physician. To those who knew him best, his power of searching into the complex framework of the body, and dragging the hidden malady to light, appeared unrivalled; but we fear that the one great object being accomplished, the same energetic power was not devoted to its alleviation or cure. Without accusing Addison of a medi-

tated neglect of therapeutics, we fancy that we can trace the dallying with remedies which has been the characteristic of more recent times. 'I have worked out the disease; if it be remediable, nature, with fair play, will remedy it. I do not clearly see my way to the direct agency of special medicaments, but I must prescribe something for the patient, at least, to satisfy his or her friends,' seems to have been a part of the habit of mind which can deal satisfactorily only with the observable and proven, and shrinks from the uncertain and questionable."

Addison did not seek to push himself into notoriety. Indeed he seems to have studiously kept himself in the background as regards public life. He took little pains to seek publication of his researches in the medical journals, and for the most part his excellent papers appear in Guy's Hospital Reports. Thus his practice was not equal to his great merits, though he died worth £60,000. In professional intercourse he appeared blunt, and even at times rude, giving the idea of hauteur and assumption of superiority. The general practitioner was liable to find him unapproachable, and to conceive of him as a man of large self-esteem. Yet underneath this outward semblance lay a most acute nervousness of temperament. This powerful, well-built, energetic, emphatic man concealed a physical nervousness and susceptibility which most deeply affected him in circumstances of trial. He often said, "I never rose to address the Guy's Junior Physical Society

without feeling nervous;" and yet at the same time he appeared to his audience to be speaking in a tone akin even to bluster. His apparent discourtesy was as far as possible from representing his real sentiments. "Viewed in its professional aspect," says Dr. Wilks, "no character on record has presented in a higher degree the sterling hard qualities of true professional honesty. We have never heard a single instance in which a word of disparagement of a professional brother escaped him. He would always strenuously, and with all his natural vigour, maintain what he believed to be the truth, but never for the purpose of underrating the opinions of others. His whole bearing in the profession was to the last degree honourable, and anything like jealousy or ill-will against another professional man never entered his mind."

The chief honour outside his school that fell to Addison was the Presidency of the Royal Medical and Chirurgical Society. But court favour did not shine on him, though none would have more worthily received it. On the Continent, as we have before said, Addison was treated with the utmost distinction. When he visited Paris, Nélaton, Trousseau and the élite of the profession entertained him at a public dinner, and gave him the warmest reception. Addison made an eloquent speech in excellent French. He was a zealous Tory, not approving of Disraeli's modernised policy, but equally removed from Eldon's tyrannical rule.

Guy's Museum of Pathology, adorned by an admir-

able bust of him by Joseph Towne, bears large testimony to Addison's energy and discernment. He added to it very largely, and his early study of skin diseases led him to suggest and superintend in execution a plan for illustrating skin diseases by wax models, and carefully coloured drawings from life—a process afterwards extended widely through the range of pathology.

"Every feature of Addison's face," says Dr. Lonsdale, "was well defined, and comported well with his finely-proportioned massive head. He had dark hair, large eyebrows, and eyes of deep hazel colour; his nose was pronounced, his lips full and voluble, and rather special in action, and his chin firm and broad; and his general physiognomy was stamped with vigour and unmistakable character throughout. He had a deep penetrating eye, that became full of life and light when engaged in debate. Of commanding presence and firm significant step, he possessed a keen penetrativeness, indeed a special discernment that never failed him in private life, and but rarely at the bedside of the sick. He stood before you the impersonation of power and dignity and independence." Some persons who knew him well believed that he would have had equal success at the bar, in the senate, in the navy or the Church. Whatever he attempted, he would have mastered, and would have carried out, undisturbed by opposition, undeviating in principle.

Dr. Addison did not marry till he was some years over fifty. His wife was the widow of W. W. Hanx-

well, Esq. The wedding, in September 1847, took place in Lanercost Church, and was attended by an unusual incident. Just before the ceremony, and unknown to the party, a storm had blown part of the roof of the church on to the altar table. When he saw the wreckage, Addison exclaimed to his biographer, nervously clutching his arm, "Good God, Lonsdale! is this not ominous?" But his friend, suggesting that any part of the building would do for the ceremony, and the bride smilingly showing no diminution of cheerfulness, reassured the doctor, and all went off well. Mrs. Addison, who had two children by her first husband, but none by the second, survived Dr. Addison twelve years. She is described as extremely amiable, and an excellent wife.

In the spring of 1860 Addison was compelled to retire from his hospital duties by a threatening of brain-disease. He settled at Brighton; but his disease progressed, and ended in his death on 29th June 1860. He was buried at Lanercost on the 5th of July. A marble tablet in the chapel of Guy's Hospital records that he won the admiration and the confidence of the students of the Hospital by his profound knowledge and earnest eloquence: and that he was beloved by the patients for his unwearied attention and kindness to them. One of the medical wards in the new buildings of Guy's is named after him "Addison Ward." It is worthy of note that Addison, like John Bell, was a musician, and ready at learning a new instrument.

Being slightly deaf in one ear, he was correspondingly acute with the other. This ear he used with surpassing skill in auscultation of the heart and lungs.

In the preface to an edition of Dr. Bright's "Clinical Memoirs on Abdominal Tumours," published by the Sydenham Society in 1861, Dr. Barlow well remarks, "There has been no English physician—perhaps it may be said none of any country—since the time of Harvey, who has effected, not only so great an advance in the knowledge of particular diseases, but also so great a revolution in our habits of thought, and methods of investigating morbid phenomena and tracing the etiology of disease, as has the late Dr. Richard Bright. To those who have received the knowledge of the connections of dropsy, albuminous urine, and disease of the kidney, among the first rudiments of medicine, the facts which establish that connection may appear so simple and easily ascertained, that the amount of labour, the accuracy of the observation and the rigid adherence to the inductive method which characterised the whole of Bright's researches, may hardly have been suspected, still less adequately appreciated."

RICHARD BRIGHT was born at Bristol in September 1789, his father being a member of the wealthy banking firm of Ames, Bright, & Cave, and his elder brother subsequently representing Bristol in three parliaments. His early education was conducted by Dr.

Estlin, and later by Dr. Carpenter, both names of note in Bristol. In 1808 he entered at Edinburgh University, at first attending Dugald Stewart, Playfair, and Leslie, in whose mathematical class he gained a prize in 1809, commencing the study of medicine under Monro tertius, Hope, and Duncan.

In 1810 Dr. Bright, with Dr. (afterwards Sir Henry) Holland, accompanied Sir George Mackenzie in his journey through Iceland, and contributed notes on botany and zoology, as well as other portions, to "Mackenzie's Travels in Iceland" (Edinburgh, 1811). Mackenzie acknowledges Bright's cheerful and ready exertion and undeviating good-humour in the many cross accidents that befel the party. Several times the two medical friends were in imminent danger, and we cannot but be thankful that these lights of medicine were spared to do their life work.

Returning from Iceland, Bright's clinical hospital work was commenced at Guy's Hospital, London, where he lived in the house of a resident officer for two years, a foretaste of the forty years' residence which he practically made within its walls. Astley Cooper was then in his best form, and young Bright was at once attracted to pathology and *post mortem* observation. At this early date he made a drawing of a granular kidney, one of the morbid conditions which he was afterwards to do so much to elucidate. In 1812–13 Bright was again a student at Edinburgh, where Gregory was still in full vigour: and he graduated on

the 13th September 1813, producing a thesis on Contagious Erysipelas. With the idea of graduating at Cambridge, he entered at Peterhouse, where his brother was a lay-fellow, but he only resided two terms, finding his studies impeded by college discipline. In 1814 Bright was one of the crowd of English voyagers upon the Continent, and made himself conversant with French and German, attending professional lectures especially at Berlin and Vienna. In the spring of 1815 he travelled considerably in Hungary, and the result of his observations, for he was emphatically an observer, was given to the world in his large quarto volume of "Travels from Vienna through Lower Hungary, with Remarks on the State of Vienna during the Congress of 1814," published at Edinburgh, 1818. This was a most valuable contribution on the social condition, statistics, and natural history of that country, then so little known in England. In all this it is evident how much Dr. Bright's career was facilitated by the comfortable circumstances in which he was placed pecuniarily: not that money gave him his talent, but that it prevented him from suffering from the obstacles and disadvantages which have attended the career of so many physicians.

Meanwhile, Dr. Bright, in the winter of 1814, had been studying cutaneous diseases under Dr. Bateman at the Dispensary. On his return home through Belgium, about a fortnight after Waterloo, he saw many interesting cases of disease among the sick and wounded from the late contending armies. In December 1816 he was admitted

a Licentiate of the London College of Physicians, and was soon after elected assistant-physician to the London Fever Hospital, paying the frequent price of a severe attack of fever, which almost cost him his life. In the summer and autumn of 1818 he again visited the Continent, spending a considerable time in Germany and Italy, and returning through Switzerland and France.

From 1820 we may date Bright's full entry upon his professional career; for he now took a house in Bloomsbury Square for private practice. His election the same year to the assistant-physiciancy to Guy's Hospital led him to give up the Fever Hospital and concentrate his attention on the work at Guy's. He became speedily noted for his diligent attendance in the wards, and for tracing the causes of his patients' symptoms in the *post mortem* room when they unhappily arrived there. For many years he spent six hours a day in his beloved scene of investigation; and long afterwards, when private practice absorbed more of his time, he longingly looked back upon the past years of cheerful research and successful toil. His progress, well prepared for, was now rapid. In 1821 he was elected F.R.S.; in 1822 he began to lecture on Botany and Materia Medica; and in 1824 he lectured on Medicine, in conjunction at first with Dr. Cholmeley, later taking the whole course alone. Some years afterwards Dr. Addison became associated in this lectureship, and the two famous men for many years upheld and raised the fame of Guy's by their copartnership.

Bright was not a theorist, was devoid of special doctrines and "views," but as Dr. Wilks* well puts it, "he could see, and we are struck with astonishment at his powers of observation, as he photographed pictures of disease for the study of posterity." From this Dr. Wilks infers that he did not thoroughly perceive the value of his own work, and that he attached no more importance to diseases of the kidney than to those of the liver and brain, which he also described. Dr. Wilks even regards many observations of Bright as more novel and original when they were published than those relating to the kidney, but the latter were of more value, and their greater significance was at once recognised. It should be distinctly understood that Bright was not simply a specialist in kidney disease, but a clinical physician of rare excellence, who followed his cases into the *post mortem* room, and carefully observed not only the changes which had taken place in the organ whose disease had caused death, but also the state of all the other organs of the body. He was one of the first, if not the first, to describe acute yellow atrophy of the liver, pigmentation of the brain in melanæmia (or pigmented blood) due to miasma, condensation of the lung in whooping-cough, unilateral convulsion without loss of consciousness in local brain diseases, the bruit of the heart in chorea, the small echinococci on the interior of hydatid cysts, &c.

* Historical Notes on Bright's Disease, Addison's Disease, and Hodgkin's Disease, in Guy's Hospital Reports, 3d series, vol. xxii.

It is strange indeed that dropsy should have existed so long and its cause have been undiscovered; and that renal disease, as we now understand it, should have been almost unknown. For more than a century before Bright's work was published the occurrence of albumen in the urine of dropsical persons had been known; and cases had been noted where convulsions and blood-poisoning had occurred when the kidneys had been found small and granular after death. Dr. Blackhall had written a treatise on dropsy in 1813; but though he found the urine albuminous, he rarely went to the *post mortem* room and examined the kidneys, which indeed might often at that time remain untouched. But until Bright's first quarto volume of "Reports of Medical Cases," 1827, appeared, renal disease had not been recognised as an important malady; he was at once hailed as a discoverer, and the malady called after his name. He first showed how to recognise a common form of disease, and systematised what was known about it, and he further demonstrated that there were three or four varieties of it, a view which subsequent investigation has most fully confirmed and developed in most important directions. He proved that not only was there a continual withdrawal from the blood of most important albuminous constituents, but that this was frequently attended with a failure to remove by the kidneys that natural product of waste, namely urea, which remaining in the blood in excess became poisonous, and often produced convulsions and inflam-

mations at a distance from the kidneys. This latter view of the consequences of retained secretion was not adopted without considerable opposition, but fuller inquiry only made its truth more evident. And the adoption of a new truth had its reflex effects in other departments of investigation. Diseases of other excretory organs might possibly be caused in the same way; and so the effects of diseased liver in causing retention of the bile and its circulation in the tissues became anew illuminated; and bile-poisoning and blood-poisoning were placed on a new footing.

Although a large amount of time for many years was given to the investigation of renal cases, many other departments of research were the objects of Dr. Bright's careful attention. We have already referred to some of these. Perhaps one series of phenomena that he was as much interested in as any was the various tumours of the abdomen, and the means of diagnosing between them. He published in Guy's Hospital Reports an extended set of monographs on these subjects, which have been published in a collected form by the New Sydenham Society. They are chiefly clinical, illustrated by well-grouped cases, observed and recorded with great care and accuracy, and abounding in important suggestions as to diagnosis and function.

The second volume of "Reports of Medical Cases" appeared, in two parts, in 1831, and contained principally narrations of cases of cerebral and spinal

diseases, including paralysis, epilepsy, tetanus, hydrophobia, and hysteria, with observations on their nature and pathology. The many coloured plates in both volumes are of great excellence and authority, being executed under Dr. Bright's own superintendence. He was afterwards associated with Dr. Addison in the production of the first volume of the "Elements of the Practice of Medicine." The first volume of Guy's Hospital Reports, published in 1836, contains no fewer than eight papers from Bright's own pen. In 1832 Dr. Bright was elected a Fellow of the Royal College of Physicians, and in 1833 gave the Gulstonian lectures at the College, on the Functions of the Abdominal Viscera, with observations on the diagnostic marks of the diseases to which the viscera are subject. In 1836 he was censor, and in 1837 gave the Lumleian lectures on Disorders of the Brain.

In his early years Dr. Bright's practice was not very extensive. He was disinclined to use any adventitious aids to popular reputation, and was content to pursue his tireless investigations. His publications on renal disease gradually attracted general attention, and the profession found him a most reliable and valuable consultant, so that in his later years he commanded a first-class practice. A few years before his death he resigned his post at Guy's Hospital, and was made Honorary Consulting Physician. He died on the 11th December 1858, from the consequences of extensive and long-standing ossification

of the aortic valves of the heart, the exit for the blood being reduced to a mere chink. He had long suffered very considerably, but was never thoroughly examined in life. However, he believed considerably in the value of medicine, and took large quantities of some kinds. He was buried at Kensal Green.

Bright is described as having had "a remarkably even temper and cheerful disposition: he was most considerate towards the failings of others, but severe in the discipline of his own mind. He was sincerely religious, both in doctrine and practice, and of so pure a mind that he never was heard to utter a sentiment or to relate an anecdote that was not fit to be heard by the merest child or the most refined female. He was an affectionate husband and an excellent father, not only taking the most lively interest in the welfare of his children, and in their pursuits, but never so happy as when he had them around him; so that half the pleasure of the long vacation was lost, unless he had as many members of his family as possible for his companions." He married, first, the third daughter of Dr. Babington, senior; and secondly a sister of Sir William Follett, by whom he left surviving three sons, one being Dr. Bright of Cannes, and another the Rev. James Franck Bright, the well-known historian, and Master of University College, Oxford.

It is said of Bright that he was perhaps better known abroad than any other British physician of his time.

The confidence reposed in him by his professional brethren was dependent largely upon the minute attention he bestowed upon every case. He always took careful notes, and often made drawings, being a good draughtsman and rather a connoisseur in etchings and engravings.

## CHAPTER XII.

*LISTON, SYME, LIZARS, AND THE NEWER SURGERY.*

AMONG operating surgeons few names take higher rank than those of Liston and Syme, at one time close associates in private medical teaching at Edinburgh, at a later period jealous rivals and even antagonists, but happily again warm friends before the sudden end of the elder. ROBERT LISTON was born on the 28th October 1794, his father being the Rev. Henry Liston, minister of Ecclesmachan, Linlithgow, whose accomplishments included a considerable acquaintance with the theory of music, and who wrote a treatise on Perfect Intonation in addition to inventing an organ calculated to produce the desired intonation. He was educated chiefly by his father up to the age of fourteen, and afterwards attended classical and mathematical lectures in Edinburgh University during two sessions, obtaining a prize for Latin composition in the second. At this period of his life he exhibited great fondness for the sea, and was only induced to give up his desire to become a sailor by a promise that if he would study medicine he should eventually be a naval surgeon if he wished. His taste for a seafaring life never forsook

him; and one of the relaxations which he most enjoyed up to within a few weeks of his death, was sailing in a yacht which he kept on the Thames. He was also very fond of field-sports.

In 1810 Liston commenced medical study as the pupil of Dr. Barclay, the well-known anatomical lecturer. He soon became noted by his instructor for his zeal and untiring assiduity, and he eventually chose him as his assistant and prosector, an office he retained until 1815. It was thus that Liston acquired the foundation of his remarkable knowledge of surgical anatomy, which his later experience strengthened, and to which he added a dexterity in the use of surgical instruments, and especially the knife, which was unsurpassed in his time.

In 1815 Liston became surgeon's clerk or house-surgeon in the Royal Infirmary of Edinburgh, in which capacity he availed himself fully of the opportunities for making *post mortem* examinations, which were then performed by the house-surgeons. In 1816 he went to London, and studied several months at St. George's Hospital, and also attended some of Abernethy's lectures. In 1817, having taken the diplomas of the College of Surgeons both in London and Edinburgh, he began practice in Edinburgh, and again assisted Dr. Barclay in his anatomical teaching. But misunderstandings arising between them, Liston left Barclay and commenced to lecture on his own account at the beginning of the session 1818–19, James Syme becoming his assistant. In

1823 Liston gave up teaching anatomy in favour of Syme, in order to devote himself entirely to surgical teaching; but Liston retained a large share of the proceeds of the anatomical lectures, as the originator and more important proprietor of the joint school. This arrangement did not last long, Syme withdrawing to Brown Square in 1824: and it appears that Liston is, at least equally with Syme, open to the charge of having displayed serious jealousy in this matter. They were unavoidably serious rivals, too nearly equals in power, and perhaps too conscious of their own individual claims, to be able to view with equanimity each other's proceedings and advancement.

Liston had published a little book on the Surgical Anatomy of Crural Hernia (1819), and soon acquired fame by performing several brilliant operations, difficult amputations, ligatures of arteries, lithotomy, &c. At that time there were many defects in the management of the Royal Infirmary, and Liston set to work, young as he was, to agitate for their removal. Unfortunately he did not make any attempts to conciliate the managers in so doing, and his outspoken complaints were met with bitter opposition from some of the surgeons as well as managers. He entered into the spirit of controversy which Dr. Gregory had done so much to foment, and in which so much of the talent and time of Edinburgh men was then wasted. In 1821 Liston records that he was almost daily applied to by patients from the Infirmary who had failed to secure

relief from the surgeons, and he was exposed to the charge of decoying patients thence. It was even demanded of him, on pain of perpetual exclusion from the surgeoncy to the Infirmary, that he should refuse his professional assistance to any person who had been a patient there. He naturally refused to comply with any such condition, nor would he absent himself from attendance on the Infirmary practice, as was also suggested. It is fair to say that Liston courted the fullest investigation of his actions, and denied that he had ever directly or indirectly insinuated to any patient of the Infirmary that the practice followed there was bad, or that he himself knew better, or had in any way tried to entice patients away. But he did complain of the tedious and often injurious delay which took place before patients were operated upon, and the unsatisfactory result of many of the operations; while he himself had undoubtedly cured many discharged as incurable, or imperfectly relieved. The young surgeon showed so vigorous a front that great efforts were made to make the most of any imprudences he committed, and to deter students from attending his classes, especially by hints that they would come off very badly before the College of Surgeons if they did. Strange that he who now maintained so bold an attack upon convention and authority, should have shown such jealousy of his former demonstrator, Syme, and have endeavoured by manner, and more than manner, to repress and depreciate a still younger man's skill.

This was but one of the many inconsistencies and difficulties that Liston's consciousness of his own powers and his abrupt and somewhat rough manner of dealing with differences of opinion led him into. Nevertheless the scathing charges of incompetency which Liston brought against some of the surgeons then in office, and supported in detail, were sufficient to prove to the managers that Liston was no ordinary young man, but must be allowed a full field for his talents; and consequently gaining increasing fame as a lecturer on surgery, and attracting large classes of students, Liston in 1828 became one of the surgeons to the Royal Infirmary.

But Liston's interest was insufficient to gain him the Professorship of Surgery in the University when it fell vacant, and he gladly accepted the offer of the Surgeoncy to the North London Hospital with the Professorship of Clinical Surgery in University College in 1834. His transfer to London was a striking success. He had already published, in 1833, his "Principles of Surgery," which went through several editions. Its clearness, simplicity, and homeliness of style made it popular, and well calculated to widen his fame. Unornamental almost to a fault, and perhaps deficient in illustration, he gave much practical information, and definitely elucidated his subject. His "Practical Surgery," published in 1837, chiefly giving the results of his own experiences, was still more popular. His brilliant talents, however, were those of an operator. It was

said of him that he possessed every qualification for success in this department, great physical strength and activity, coolness, promptitude, energy, and unflinching courage, a steady hand and a quick eye, a resolution which rose with the difficulties he encountered, and rested on a just reliance on his complete knowledge of anatomy and pathology. Yet the brilliant operator was not over anxious to exhibit his talents; he was often considered remarkably cautious. His deliberation was as marked before undertaking an operation as was his fearlessness when it was undertaken. His readiness and resource under the most varied and difficult combinations of circumstances were surprising. He excelled in irregular operations in which no well established mode of procedure could be followed, but he had to depend on the decision of the moment as to the particular case. He knew exactly what he meant to do and how to do it, and this without delay or hesitation. Thus he won the reputation of being the most dexterous operator of his day.

In addition to his "Surgery" Liston published numerous valuable papers on amputation, difficult cases of aneurism, tracheotomy, lithotomy, and lithotrity. He left his impress on a very large number of operations, either devising new methods of meeting old difficulties, or improving the accepted modes of dealing with them. He invented an improved shoe for the treatment of club-foot, and was great at reducing dislocations. He once succeeded in reducing a dislocated

hip-joint after the dislocation had continued no less than two years. He introduced the method of reducing dislocated phalanges, especially of the thumb, by passing the ring of a door-key over the part and hitching it against the projecting end of the bone, so that extension and pressure could be brought to bear simultaneously. After dislocation of the thigh backwards, he several times took advantage of the immediate powerlessness of the muscles from shock, and reduced the limb on the spot without the use of pulleys or even without the aid of an assistant. He invented or modified splints for broken limbs. His methods of performing amputations by flaps became very largely adopted. He had great success in what are known as plastic operations, such as restoring a nose by taking a flap from the upper lip. His name is scarcely more associated with amputations, however, than with lithotomy and lithotrity, to which he devoted great attention. Many of his lectures on those subjects were published in the *Lancet* and were widely read.

Much importance has been assigned to Liston's personal strength as constituting a large element in his operative successes. His hand and arm, it was said, might have furnished models for a Hercules, and their power was not unfrequently shown in operations requiring great muscular exertion. But he was equally successful in those in which the most delicate manipulation was demanded. His decision and force of character were equal to the accurate control over his

powerful yet adaptable muscles. He would amputate the thigh single-handed, compress the artery with the left hand, using no tourniquet, and do all the cutting and sawing with the right, with only the aid of a house-surgeon to hold the limb and tie the ligatures on the arteries. He did not need time for reflection; his actions were prompted by a kind of intuition akin to genius; he seemed to comprehend at a glance the requirements of any particular case. Yet he never gave up his habit of studying anatomy, spending as many hours as possible in actual dissection.

One of Liston's striking exhibitions of decision and invention occurred during an amputation of the thigh by Russell, then Professor of Clinical Surgery at Edinburgh. An artery in the cut bone bled profusely, and in consequence of its bony surroundings could not be tied in the ordinary way. Liston with the amputating-knife at once cut off a chip of wood from the operating table, formed it into a cone, and drove it into the bleeding orifice, and in this way immediately arrested the bleeding.*

Liston's general principles of treatment are also worthy of note, as he exercised by their means a considerable influence on the profession. He early

* The writer is indebted for this anecdote to Dr. Paterson's "Memorials of the Life of James Syme," in which a number of incidents relating to Liston are given, with an interesting parallel between the careers of the two great surgeons (chapter xii., p. 210–216). It is much to be regretted that no biography of Robert Liston has yet been written.

became alive to the unwisdom of over-treatment, and tended more and more to trust to natural recuperative powers. He was thus enabled to dispense with the multitudinous paraphernalia which surrounded the operating surgeon, the repeated poulticing, strapping, bandaging, anointing, which often rendered a stay in a surgical ward almost intolerable.

On the death of Sir Anthony Carlisle in 1840, Liston was elected to the Council of the Royal College of Surgeons, but did not become one of the Examiners until March 1846. There is little doubt that he would before long have attained the Presidency of the College, had not his career been cut short. His practice became very large, and there is no doubt that he undertook an amount of work which many men would have found impossible. Yet he was noted for his consideration of the poor and necessitous. It was remarked in the *Times* after his death that "his nature abhorred everything sordid, and no man ever was more strongly impressed with the feelings of an honourable, generous, and independent practitioner. In whatever rank of life the 'case' occurred, if it was one of difficulty or interest, this master of his art was ready with the potent spell of his unerring bistoury, and his reward was in the consciousness of his own power, and in the noble pride of having been ministrant to the relief of suffering humanity. His manner in ordinary society was sometimes complained of as harsh or abrupt, and he certainly was occasionally

neglectful of the mere trifling courtesies of life, and sometimes careless of refinement or punctilio. He was a man of thought more than of show. He could not bear triflers, and he did not always avoid showing his distaste. He was a fervid lover of truth and sincerity, and sometimes, perhaps, expressed himself too strongly when he thought there lurked any meanness or deceit or affectation. But in the proper and trying scene of the labours of the medical man—in the chamber of the sick—he was gentle as he was resolute. He never had a patient who was not anxious to become a friend, and the voice which was sometimes discordant amid the petty annoyances of daily life was music to the sick man's ear. Into the scene of suffering he never brought a harsh word or an unkind look, and the hand which was hard as iron and true as steel in the theatre of operation was soft as thistle-down to the throbbing pulse and aching brow. It may also be added, with perfect truth, that in the exercise of his arduous duties, among persons of the highest rank and most fastidious sympathies, his delicacy and forbearance were as remarkable as the sound sense which regulated all his professional conduct. His heart was in his business."

Liston was warm in his friendships though strong in his dislikes. He did not readily take to strangers. It is to be noted that he became frankly reconciled to Syme after their serious divergence. He took the initiative finally in 1839, and a genial correspondence took place between them. They met once more in

the autumn of 1847, when Liston visited Edinburgh, and were often together. Liston dined with Syme at Millbank the day after his arrival in Edinburgh, and again the day before he left for London. Before very long, however, Liston was carried off by aneurism of the aorta, which must have existed for years, and been fostered by his great physical exertions, which characterised his recreation as well as his work. It had been found impossible to diagnose his ailment with certainty till some little time before his death, which came with startling suddenness upon the medical world and the public generally. He died on December 7, 1847, aged 53, and was buried at Highgate Cemetery. A body of 400 students and a large number of medical men attended his funeral. He left a widow and a family of six children, two of whom were sons. One of these, however, died very soon after his father. In the following May Lord Brougham delivered a glowing eulogy on Liston at the distribution of prizes at University College. A sum of about £700 was subscribed for a memorial, which took the form of a marble statue—placed in the College—and a gold medal called the Liston Medal, which is awarded annually for surgery at the same institution.

JAMES SYME, another of the great Scotch surgeons of this century, was born in Edinburgh on the 7th November 1799. His father, a Writer to the Signet, was of good family, but owing to unsuccessful specula-

tions was involved in difficulties, and left nothing behind him. Young Syme was educated at the High School of Edinburgh, and soon showed characteristic patience and perseverance without brilliant parts. A certain thickness of speech, almost amounting to an impediment, strengthened the impression of shyness that he gave. Instead of country sports, he was fond of botanising, and of making skeletons of small animals. A similar tendency manifested itself in his attachment to chemistry and his fondness for making chemical experiments. Thus he was equipped with a sufficient bent towards studies connected with medicine to render it not surprising when he adopted the medical profession.

From 1815 onward Syme attended the University of Edinburgh, taking both Arts and Science lectures at first. Incidentally, in the course of his chemical pursuits, he made an original discovery of the waterproofing process, and having first dissolved indiarubber, was able to construct flexible tubes of it, and to render various substances waterproof by brushing a thin solution of it into their interstices. Not to be diverted from his medical work, Syme declined to take out a patent, but published his method. Mr. Mackintosh of Glasgow soon after patented a process, and Syme gained no advantage from his discovery.

Syme's early friendship with Liston led him to enter Barclay's Extra-Academical classes in the winter of 1817–18. In the next winter, however, Syme

followed Liston when he started on his own account, and assisted him in demonstrating from the beginning. He perseveringly continued studying, and in 1822 went to Paris to improve himself both in anatomy and operative surgery, gaining especial advantage from Lisfranc's and from Dupuytreu's operations and instructions.

While demonstrating for Liston, Syme was pursuing his medical studies at the Royal Infirmary and elsewhere, and became impressed with the unwisdom of the repeated and severe blood-letting then in vogue. In 1823, having become a qualified surgeon, and entering into practice in Edinburgh, Syme performed his first striking operation—one which he himself designated as "the greatest and bloodiest in surgery"—namely, amputation at the hip-joint. Its success was an earnest of his future triumphs. In the same year Liston retired from teaching anatomy to devote himself entirely to surgery, and Syme occupied his place. The summer of 1824 was spent in studying surgery as practised in Germany. The same year a coldness which had been growing between Liston and Syme caused the withdrawal of the latter from association with Liston, and his starting a new school in Brown Square in partnership with Dr. Mackintosh. Here Syme taught anatomy and surgery, Dr. Mackintosh medicine and midwifery, and Dr. Fletcher physiology. The class in surgery numbered as many as fifty students. But the difficulties and scandals attending the due

supply of subjects for dissection gradually disgusted Syme with the anatomical part of his work, and a quarrel with Dr. Mackintosh finally led to his quitting the Brown Square school, and devoting himself entirely to surgery. This was a bold stroke, seeing that he had four or five formidable competitors in Edinburgh, including Liston, Lizars, and Fergusson (afterwards Sir William). Yet so strikingly was he justified by the event, that in 1828–9 his class increased to 250, the largest ever assembled by any teacher of pure surgery in Edinburgh. Practice had been flowing in upon him, stimulated in 1826 by an important paper on the treatment of wounds, in which he insisted on the importance of providing a free outlet for all discharges instead of almost hermetically sealing them up, as was so frequently done. In 1827 he gave another evidence of his remarkable operative skill by successfully removing a huge tumour involving part of the lower-jaw bone, an operation which no other surgeon would undertake. Sixteen years afterwards the patient was met with, having his deformity well covered by a vigorous beard.

It was natural that the lack of a hospital appointment should be keenly felt by Mr. Syme, and that he should apply for one when a vacancy occurred at the Royal Infirmary; but his action when this was refused to him, in view of the rivalry existing between himself and Liston, was eminently energetic and commendable. He started a small hospital for twenty-

four patients at Minto House on his own responsibility; but although he fortified himself with an influential committee and received a certain amount of annual subscriptions, the principal part of the expense throughout fell upon himself. Thus in the first year the public subscribed £217 and Mr. Syme £779, including £400 which he received in students' fees. About this time, too, he married a sister of his old schoolfellow Robert Willis, afterwards the biographer of Sydenham, and set up a carriage. These expenses led him into pecuniary difficulties, which were not easily surmounted at first, but in a few years his circumstances became easy through the rapid increase of his practice.

Syme's clinical lectures became remarkable from the novelty of the method he employed. It had been customary in Edinburgh to lecture on a certain number of cases somewhat resembling each other, without the patients' presence or anything to emphasise the instruction. The young innovator brought the patients one by one into the lecture-room, questioned them, demonstrated the principal features of their complaint, and then explained the principle of his treatment, in the presence or absence of the patient, according to circumstances, and finally operated, when necessary, in the presence of the pupils. Syme was a man of few words and earnest manner; he illustrated his remarks by few but well-chosen personal experiences, but gave nothing superfluous; and it is not to be wondered at that his success was marked.

Liston's jealousy increased as the success of Minto House became assured. In 1830 Liston wrote in the subscription book of his rival's hospital, "Don't support quackery and humbug." This led Syme to bring an action for libel against Liston, which the latter had to settle by apologising. In 1831, however, his exertions were successful in gaining the professorship of surgery at the Edinburgh College of Surgeons for his friend Lizars by a majority of one vote over Syme. In 1832, when Liston's practical treatise "The Elements of Surgery" appeared, Syme also came forward with his more theoretical "Principles of Surgery." In 1833 Syme took advantage of a chance which he longed for, and agreed with the retiring professor of clinical surgery in the University (Russell) to allow him £300 a year for life if he became his successor. This was after Liston had refused to come to any such arrangement. When it was carried into effect in 1833 the managers of the Infirmary felt that they must allow the new clinical professor to have wards for clinical teaching, notwithstanding Liston's active opposition.

Syme's success as a teacher followed him to the Infirmary, and pupils crowded his wards. He was regularly present when Liston operated, but never took any part with him. Syme's appearance often, it is said, excited the evident scorn of Liston, though no open hostilities took place. The strained condition of affairs was alleviated by the removal of Liston to London in 1835. It is satisfactory to find that the quarrel was

finally healed in 1839, when Liston wrote to Syme, "Will you allow me to send you a copy of my last book? Write and tell me that you wish to have our grievances and sores not plastered up, but firmly cicatrised." A genial correspondence followed.

We wish it could be said of Syme that all his disputes were as happily concluded. His intimate friend Dr. Belfrage, minister of Slateford, whom he consulted in all his difficulties, told him "he was always right in the matter, but often wrong in the manner, of his quarrels;" and this must be held to account in part for the number and seriousness of the controversies in which he became involved, few of which, however, need be referred to here. It may be questioned whether, on numerous occasions when Mr. Syme defended himself against attacks or brought actions for damages, he would not have done better to content himself with appealing to his well-known character and attainments, and living down aspersions. But Gregory and others in Edinburgh had left an evil habit of controversy in the air; and though Syme was more moderate than his predecessors, he often had his hands full. Although he was himself a great improver of professional practice, he was really a conservative in his attitude towards other men and new methods. His opposition to Simpson's discovery of anæsthetics, and to his introduction of acupressure for closing cut bloodvessels without the use of a ligature, is an example of this. It is to be noted, however, that Syme's numerous controversies left no

detrimental impression on the public, and did not detract from the warmth of affection which a host of friends testified towards him.

Liston's removal to London left Syme practically in possession of the leading surgical practice in Scotland at the age of thirty-five. So marked was his progress that soon after the Queen's accession he was appointed Surgeon in Ordinary to the Queen for Scotland. A little later a considerable fortune was left him by an uncle, and thenceforward he enjoyed an ease of circumstances which, while it rendered his actions independent, was not at all detrimental to his professional success. The good work which, in addition to operative successes, he was accomplishing may be judged by the titles of the papers contained in a selection from his published writings, published in 1848. These "Contributions to the Pathology and Practice of Surgery" included, among others, papers on senile gangrene, on the power of periosteum to form new bone, on ulcers of the leg, on amputation at the ankle-joint, on the treatment of popliteal aneurism, on excision of the ankle-joint, on the contractile or irritable stricture of the urethra, and on lithotomy. In all these he introduced new modes of treatment or operation or propounded new views, and many of his improvements are generally adopted. In 1847 Liston's sudden death led to his chair at University College, London, being offered to Syme. After anxious weighing of the question he decided to accept the post. On his

quitting Edinburgh he was entertained at dinner by more than a hundred members of the medical profession. Dr. (afterwards Sir Robert) Christison, who presided, said no man had ever obtained so early in life as Syme the position of consulting surgeon for a whole nation; and this he owed entirely to his intrinsic merits. He referred to the collateral pursuits with which many doctors had recreated themselves. Dr. Cullen had his rural retreat; Dr. Gregory his Latin and polemics; Sir Charles Bell his pencil and his rod; Mr. Liston his hunter; Mr. John Bell his trombone. Mr. Syme had rendered his garden and conservatories conspicuous in a land of gardeners.

Mr. Syme arrived in London in February 1848, and settled in Bruton Street. An amusing incident occurred in connection with his first lecture at University College. Having been accustomed to give clinical lectures in the operating theatre at Edinburgh, which was provided with seats, he supposed a similar arrangement obtained in London, and announced his intention of lecturing in the operating theatre without having previously visited it. On entering the room to deliver his lecture, he found the students were seated inelegantly on the rails which rise behind one another in the amphitheatre. This attitude shocked him at first, but was soon exchanged for a more befitting one.

Difficulties, however, arose in connection with the chair of systematic surgery, which he was asked to undertake with that of clinical surgery. This he

felt would occupy too much time, and require a devotion to theoretical surgery and to pathology which did not accord with his bent. On the 7th of May some discourteous demonstrations at the College prize distribution towards two of his colleagues deeply wounded him; and he wrote "that the slightest approach to any insult of the kind, whether offered in the comparative retirement of the lecture-room or inflicted publicly with the silent sanction of the presiding authority of the College (Lord Brougham), would effectually incapacitate him from ever addressing his pupils with satisfaction to himself or benefit to them." In three days afterwards, having declined the fresh post offered him, he resigned that for which he had quitted Edinburgh. Fortunately his old position at Edinburgh had not yet been filled up, and he returned with alacrity to his familiar theatre and beloved home, his experiment having cost him £2000. He had been well received by the heads of the profession in London, and was rapidly gaining practice. His own brief comment on the change from Edinburgh to London was, that ambition made him sacrifice happiness, and that he found such a spirit of dispeace in University College as to forbid any reasonable prospect of comfort.

The succeeding years furnish a multitude of records of honours paid to Professor Syme, and of distinguished successes in operating. In 1848–9 he was elected president of the Medico-Chirurgical Society of Edinburgh, and greatly elevated the character of its pro-

ceedings; in 1850–1 he was president of the Edinburgh College of Surgeons. For years few numbers of the *Monthly Medical Journal* appeared without a lecture, case, or observation of importance from him. One of his most striking operations was the removal of the entire upper-jaw bone by making one incision in the cheek, with perfect success; the wound healed without a drop of matter, and it was difficult subsequently to trace the line of incision. The patient's articulation remained quite distinct. Two of his most difficult operations in 1857 were connected with the tying of arteries for cure of aneurisms—one of the carotid, the other of the iliac, artery. The frightful risks and the excellent procedure by which they were successfully encountered still further enhanced Mr. Syme's great reputation. In 1856–7 his "Principles of Surgery" reached a fourth edition. Its terse style and clear exposition had rendered it a great favourite with practical surgeons. A striking feature in it is the constant reference to fundamental principles. It was said of him at this period, "Mr. Syme is never at fault. Something unforeseen or unexpected may occur, but its import is at once understood and the contingency provided for."

At the Great Exhibition of 1862 Syme was chosen chairman of the jury on surgical instruments. In 1863 he visited Dublin once more, and expounded his principles before the leading surgeons, being received there as a man of European reputation. His operations

for the relief of axillary and carotid aneurisms, as well as his bold excision of the whole scapula for tumour, with safety and without much loss of blood, were continually increasing his fame. In 1864 he published his work on the Excision of the Scapula, and proved that the wound might heal quickly and soundly, and the arm remain strong and useful. A great operation for relief of a distressing disease by excision of a large part of the tongue was wonderfully successful in November 1864. This was the last case Syme had time to publish. In August 1865 he gave the address in surgery at the meeting of the British Medical Association in Leamington. In it he gave a graphic account of modern improvements in surgery, in which he had himself a large share, and contrasted it with the state of things at the beginning of his professional career. It constituted a most valuable review of the history of surgery during the century. Syme was the first representative at the Medical Council of the Universities of Edinburgh and Aberdeen, and might not improbably have been its president but for his illness and death. His last great controversy was that known at Edinburgh as the "Battle of the Sites." A new hospital was required, and at first, in 1866, Syme was strongly in favour of a new building on the old site. But further experience of erysipelas and pyæmia in the old hospital convinced him of the necessity of having an entirely new building in which the old disadvantages would be absent. He consequently changed his view,

and strongly advocated the new plan, which was ultimately, in 1869, accepted. But he did not live to see the new work begun.

In private life Syme was genial and happy, throwing off all professional cares, quarrels, and anxieties in the home circle. His unobtrusive religion was an essential feature of his character. He was devoted to truth and earnest in its advocacy, and hence sprang many of his controversies; but he had no love for controversy as such. His domestic life was very happy, though broken at various times by death. His first wife died in 1846: of her numerous family two daughters only survived to adult age, one of them being now the wife of Sir Joseph Lister. His second wife was the sister of Burn, the architect: this union was equally happy with the former; but the second Mrs. Syme also died before him. Her youngest child was Mr. James Syme, the present proprietor of Millbank. This house and estate Professor Syme decorated and improved with all that horticulture and excellent taste could devise, and it was under his sway one of the most charming resorts near Edinburgh. His social gatherings of eight, ten, or twelve choice spirits were delightful, and his hospitality was both large and discriminating.

It is pleasing to record that Mr. Syme welcomed the greatest surgical improvement of modern times, that brought forward by Professor Lister, his son-in-law. In 1868 he contributed a valuable paper to the *British*

*Medical Journal* "On the Antiseptic Method of Treatment in Surgery," by which he greatly aided its progress. This was his last year of full practice. In April 1869 he was seized with paralysis, resigned his professorship and surgeoncy soon after, but recovered sufficiently in the autumn to receive a testimonial in St. James's Hall, London (November 10, 1869), at a public dinner in which the leaders of the profession vied with one another in honouring him. The testimonial took the form of the endowment of a surgical fellowship in the University of Edinburgh, in addition to the placing of a marble bust in the Infirmary or University library. A bust was subsequently placed in both of these situations. Syme at length died, after repeated attacks of paralysis, on the 20th of June 1870.

It has been well said by Professor Goodsir, that few men come to their principles at such an early age as Mr. Syme. His terseness of writing aided greatly in their propagation, and his practice was extended far and wide by the assurance that "he never wasted a word, nor a drop of ink, nor a drop of blood." He was great too in his conservation of all parts which might by any dexterity and patience be made useful. His revival of operations for the excision of joints rather than the amputation of limbs is an instance of this. Syme's operation of amputation at the ankle-joint will always remain in vogue as the least fatal and most useful in surgery.

Professor Lister has thus summed up Syme's charac-

ter as a surgeon—"A practical surgeon, Mr. Syme presented a remarkable combination of qualities; and we have not known whether to admire most the soundness of his pathological knowledge, his skill in diagnosis, resembling intuition, though in reality the result of acute and accurate observation and laborious experience, well stored and methodised; the rapidity and soundness of his judgment, his fertility in resources as an operator, combined with simplicity of the means employed, his skill and celerity of execution, his fearless courage, or the singleness of purpose with which all his proceedings were directed to the good of his patients."

Though his fame has been overshadowed by the greater distinction of Liston and Syme, John Lizars deserves mention, not only as a brilliant operator, but also as a teacher, lecturer, and author. He was fortunate in his instructor, having been the pupil and apprentice of John Bell. After obtaining his qualification in 1808 Lizars became a naval surgeon, and saw good service on the Spanish and Portuguese coasts in Lord Exmouth's fleet. He left the navy in 1815, and settled in Edinburgh, joining Allan, who lectured on surgery, and taking himself the departments of anatomy and surgery. Later, when this partnership was dissolved, Lizars continued to lecture, adding surgery before long to his programme, and hence being almost incessantly engaged during the prolonged winter session

with his daily lectures on each subject. His zeal and method attracted, and retained for years, classes frequently numbering one hundred and fifty. He was obliged after a time to limit his labours when the Edinburgh College of Surgeons decided to recognise lectures in one department only from any given lecturer; and he resigned his anatomical lectures to his brother Alexander, afterwards Professor of Anatomy in the University of Edinburgh, and thenceforward lectured on surgery alone. In 1831 John Lizars was appointed Professor of Surgery to the College of Surgeons, a post which he held for eight years. He had previously become surgeon in the Infirmary, and was considerably senior to Liston. The two were not unworthy compeers as regarded brilliancy in operating. Lizars' ease and coolness under circumstances of difficulty were remarkable. He is said to have been the first who performed the operation for the removal of the lower jaw.

Lizars published a "System of Practical Surgery"; but is perhaps best known for his great folio series of coloured "Anatomical Plates" with companion (octavo) volume of text. The engravings of the plates were for the most part made from original dissections by himself. They formed an immense series of illustrations, occupying 110 folio plates, and some of them, especially those on the brain and nervous system, can scarcely be surpassed for artistic excellence. It was really a magnificent work for its day, and had a very

large sale; and as regards a great portion of the contents, since they show actual facts, they cannot be superseded. After his retirement from teaching, Lizars devoted himself to private practice, both surgical and general. He died at Edinburgh, May 21, 1860.

## CHAPTER XIII.

*BAILLIE, HALFORD, CHAMBERS, AND HOLLAND, THE FASHIONABLE AND COURTLY PHYSICIANS.*

ONE cannot more strikingly emphasise the change which has taken place during the present century in the views and practice of medical men than by quoting from Sir Henry Halford's biographical notice of Baillie, the nephew of William and John Hunter, and brother of Joanna Baillie. Here we have Halford acknowledging a current sentiment against physical examination of the patient. "He (Baillie) appeared to lay a great stress upon the information which he might derive from the external examination of his patient, and to be much influenced in the formation of his opinion of the nature of the complaint by this practice. He had originally adopted this habit from the peculiar turn of his early studies,—and assuredly such a method, not indiscriminately but judiciously employed, as he employed it, is a valuable auxiliary to the other ordinary means used by a physician, of obtaining the knowledge of a disease submitted to him. But it is equally true that, notwithstanding its air of mechanical precision, such examination is not to be

depended upon beyond a certain point. Great disordered action may prevail in a part without having yet produced such disorganisation as may be sensibly felt; and to doubt of the existence of a disease because it is not discoverable to the touch, is not only unphilosophical, but must surely, in many instances, lead to unfounded and erroneous conclusions. One of the inevitable consequences of such a system is frequent disappointment in foretelling the issue of the malady, that most important of all points to the reputation of a physician, and though such a mode of investigation might not prove unsuccessful in the skilful hands of Dr. Baillie, it must be allowed to be an example of dangerous tendency to those who have not had his means of acquiring knowledge, nor enjoyed the advantages of his great experience, nor have learned by the previous steps of education and good discipline to reason and judge correctly." Halford then refers to the quickness with which a good physician makes up his mind on the nature of a disease; at that time it was oftener a guess than a process of reasoning. Baillie was one of the first to study pathology, and to bring into practice physical examination.

MATTHEW BAILLIE was born on the 27th October 1761, in the manse of Shotts, Lanarkshire, his father having been Professor of Divinity in Glasgow University, his mother, Dorothea, sister of William and John Hunter. After two sessions at Glasgow, Baillie entered, in 1779, at Balliol College, Oxford, where he completed his

M.D. in 1789. Residing during vacations with William Hunter, he became almost like a son to him, and assisted him much in making his anatomical preparations and superintending his dissecting-room. On the death of his uncle in 1783, he and Cruickshank continued the lectures with great success. Baillie lectured till 1799. One of his pupils said of him that his style, though not eloquent, irresistibly commanded attention; he appeared completely master of his subject, was exceedingly clear, concise, and condensed, and never at a loss for an appropriate word. He was always modest and unostentatious. When left sole heir of his uncle William, he at once transferred to John Hunter the family estate of Long Calderwood, to which he regarded him as entitled.

Baillie's principal work is pathological. In 1793 he published "The Morbid Anatomy of some of the most Important Parts of the Human Body," and although pathology is now very different from what it was in his day, and his classification is not now useful, his facts, when properly interpreted, are still found excellent. The work met with very great success, and was translated into many European languages, besides going through five English editions in the author's lifetime.

Baillie gradually got into good practice, being appointed physician to St. George's Hospital in 1787, elected Fellow of the College of Physicians in 1790, Censor in 1791 and 1796, and Fellow of the Royal Society in 1789. On the retirement of Dr. Pitcairn

from practice in 1798, Baillie succeeded to a great part of it, and his practice was still further benefited by his marriage with the daughter of Dr. Denman, whose great obstetric practice enabled him to recommend Baillie very frequently. He resigned his hospital work in 1799, and from that time had perhaps the leading practice in London, making ten thousand pounds in some years. He was consulted about George III.'s case, and in 1810 was made Physician to the King and offered a baronetcy, which he declined. In 1814 he was also appointed Physician in Ordinary to the Princess Charlotte, and attended many members of the royal family. His manner towards his fellow-practitioners was as pleasing as his conduct to patients. To both he would carefully explain, as far as possible, his views of the nature of the case and the treatment required, and he was exceedingly successful in tranquillising the apprehensions of his patients. His modesty was transparent. He would say to his friends: "I know better perhaps than another man, from my knowledge of anatomy, how to discover a disease, but when I have done so, I do not know better how to cure it." From this one is not surprised to learn that he was not fertile in expedients, but if the simplest means failed, he was often at a loss what to do next, and was not apt at varying his prescriptions.

Baillie was not without an irritability of temper, in which we see some resemblance to John Hunter; but his heart was at bottom most kindly. He would often

say after an outbreak, "I have spoken roughly to that poor man; I must go and see him, be it ever so late;" "that patient is in better health than I am myself, but I have been too hard with him, I must make him amends." There were many instances of his great and delicate generosity to his patients. Overwork, to the extent of devoting sixteen hours a day to practice, enfeebled his constitution, and before the age of sixty he was compelled to retire in a large measure from practice. He died at his seat, Duntisbourne House, near Cirencester, on the 23d September 1823, leaving a fortune of £80,000. He bequeathed a considerable sum to the College of Physicians, with his manuscripts and other interesting curiosities, such as the gold-headed cane used by Radcliffe, Mead, and others, whose arms are engraved on it. He was buried in Duntisbourne Church, but his memory was commemorated by his professional friends by a fine bust by Chantrey in Westminster Abbey. His excellent qualities and his strong religious principle were well set forth by Sir Henry Halford in an address to the College of Physicians.

Sir HENRY HALFORD was long a contemporary of Baillie, but survived him more than twenty years. He was the second son of Dr. James Vaughan, a successful phyician at Leicester, whose third son became a judge of the Court of Common Pleas; the fourth son was Dean of Chester and Warden of Merton College, Oxford; the

fifth, Envoy-extraordinary to the United States; and the sixth was the father of Dean Vaughan, the well-known Master of the Temple. The eldest son died in his twenty-third year. The distinction which Vaughan's sons attained shows that his judgment was admirably exercised in their education. In fact, he spent his whole professional income in providing for them the best possible educational aids. Henry, like the others, was sent from Rugby to Oxford (the youngest only going to Cambridge); and he records, in eulogising his father's treatment of them, that not one of them asked or received further pecuniary assistance from him after he had finished his education, and commenced his own efforts to provide for himself.

Henry Vaughan was born on October 2d, 1766. Entering at Christchurch, Oxford, he graduated B.A. in 1788, M.D. 1791. He studied medicine for some months at Edinburgh, and also practised for a time with his father at Leicester. About 1792 he came to London, and having a good opening through his Oxford friends, had courage enough to borrow £1000 on his own security in order to establish himself in London practice. Here his good manners and evident learning stood him in good stead, and he was elected physician to the Middlesex Hospital in 1793, becoming a Fellow of the College of Physicians in 1794. In March 1795 he still further promoted his advancement by his marriage with the third daughter of Lord St. John, and rapidly rose into note. With all his talents,

however, it looks like one of fortune's freaks that Vaughan should have been appointed Physician Extraordinary to the King in 1793, at the age of twenty-seven; and that his practice should have so increased that in 1800 he was compelled to give up his hospital appointment. But fortune had more favours in store for him. He inherited a large property on the death of Lady Denbigh, widow of his mother's cousin, Sir Charles Halford; and he consequently changed his name in 1809 by Act of Parliament from Vaughan to Halford. George III. created him a baronet in the same year.

The King had indeed a strong preference for Sir Henry Halford, as he now became. He secured Sir Henry's promise, before the onset of his last long derangement, that he would not leave him, and that if necessary he would call in also Dr. Heberden and Dr. Baillie. To recite the number of royal personages to whom Sir Henry was physician would be tedious; suffice it to mention that he attended, besides George III., George IV., William IV., and Queen Victoria, having thus been the physician of four English sovereigns.

There is no doubt that Halford possessed talents of a high order. He is said to have been inferior to Baillie in accuracy of diagnosis, but superior in the cure and alleviation of disease. He had quick perception, sound judgment, and great knowledge of the powers of medicines. For many years after Baillie's illness and death he was undisputedly at the head of

London practice. At the College of Physicians his rule continued unchecked, if not unquestioned, for more than twenty years, he having been President from 1820 till his death on the 9th of March 1844. He was largely instrumental in securing the removal of the College from Warwick Lane in the city to the present commodious building in Pall Mall East. His bust by Chantrey was presented to the College by a number of Fellows. His portrait by Sir Thomas Lawrence is at Wistow, Leicestershire, where he was buried in the parish church.

Halford's early success was not favourable to his prosecuting original research nor to his publishing much that is important. His chief publications were first given as addresses to meetings of the College of Physicians. In these he showed skill and pleasing literary art. He wrote on the Climacteric Disease, on the Necessity of Caution in the Estimation of Symptoms in the Last Stages of some Diseases, on the Tic Douloureux, on Shakespeare's Test of Insanity (Hamlet, Act iii. Sc. 4), on the Influence of some of the Diseases of the Body on the Mind, on Gout, on Phlegmasia Dolens, on the Treatment of Insanity, and on the Deaths of some Illustrious Persons of Antiquity —and again, on the Deaths of some Eminent Persons of Modern Times. It is to be regretted perhaps that a man of such accomplishments should have left so little behind him; but he was of use to his day and generation; and as to the knowledge he had attained,

it served him only to affix the term "conjectural" to medicine, when speaking of the confidence Baillie inspired. At least he did not seem to have hidden from himself how little the medicine of his days could lay claim to being completely informed.

WILLIAM FREDERIC CHAMBERS, the son of an East Indian civil servant, whose family belonged to Northumberland, was born in India in 1786. Brought to England in 1793 in consequence of his father's death, he was educated at Bath, Westminster, and Trinity College, Cambridge, where he graduated B.A. in 1808. He had hoped for a fellowship, intending to take orders; but being disappointed, he turned to medicine, and entered at the Great Windmill Street School, subsequently spending a year at Edinburgh, and returning to study at St. George's Hospital, the Eye Infirmary at Moorfields, and at Bateman's celebrated Dispensary. His diligence, both in practical medical study and in dissections, attracted the attention of the St. George's physicians, and on the resignation of Dr. Pelham Warren, then one of the leaders of London practice, he was brought forward and elected physician to the Hospital in 1816 when only thirty years of age. His East Indian connection secured him, in 1819, the post of examining physician to the East India Company, after being some time assistant physician. Notwithstanding his early prominence, his professional income rose but slowly, showing that neither ability

nor patronage will avail greatly in competition with the established favourites. It was 1825 before Chambers's practice amounted to £2000; and his pre-eminence was not marked till the death of Dr. Maton in 1835, and the great age of Sir Henry Halford (who died in 1844), left him in indisputed possession of the leading London practice. From 1836 to about 1851 he received in fees between seven and nine thousand guineas a year. In 1836 he was consulted by Queen Adelaide, and in 1837 was made Physician in Ordinary to William IV., declining knighthood, though made Commander of the Guelphic order. He was continued as Physician in Ordinary to Queen Victoria, and his successful career was uninterrupted, except by rather frequent ill-health. About 1851, owing to the failure of his health, he retired from practice, and settled near Lymington, where he died on the 17th December 1855.

Chambers did not win his success either by writing, teaching, or discovering. In addition to a tall commanding figure, and the most agreeable, yet straightforward manners, he possessed striking decision, and pursued bold and successful plans of treatment in acute diseases. He kept himself well acquainted with the advances of others, and was early distinguished by his adopting the stethoscope. Like many men of great eminence, he was at heart exceedingly diffident, and felt acutely the responsibilities which he undertook. He was continually in fear of doing something wrong

or making a mistake. Thus he undoubtedly was a most conscientious physician, and it is to be feared that he gave himself much suffering by the minutely painstaking system that he adopted. Both at the hospital and in private practice, he personally recorded the particulars of every case that he saw, together with all his prescriptions—an astounding instance of laborious effort. In this way his private practice furnished sixty-seven large quarto volumes of notes, which were every day completely written up, and carefully indexed, so that he could refer with the utmost ease to any case he had ever seen. Moreover, he made in very many instances sketch maps of the diseased organs, side by side with the description. So persistent was he in this conscientious toil, that he often continued it far into the night and even till daylight, resuming work again before nine o'clock. Ill-health was a necessary consequence, but his reliability was certain to tell in practice. He could scarcely depend on a single regular meal a day, so great was the demand for his services. He literally rushed through the streets driven post-haste at ten miles an hour. After a serious illness in 1834, through having absorbed poisonous matter from a patient who had died of pleurisy, his right hand was distorted by the results of abscesses; and it was hence vulgarly reported that his fingers had become crooked from the continual habit of taking fees. The regard he won from others may be evidenced by the fact that Sir Benjamin Brodie for some weeks visited him

daily during this illness at Tunbridge Wells, when this entailed much greater loss of time than now. His liberality was well known, and this, with his frequent illnesses, caused him to accumulate no great fortune.

With regard to Sir HENRY HOLLAND, it is with regret that we own how comparatively slight are his claims to a place in the gallery of great medical men. He was accomplished beyond most men, but one is compelled to ask, what did he accomplish with his great opportunities? Whom did he teach? what did he teach? what did he discover? His travelling excursions extended over almost the whole globe except Australia. He was intimate for more than half a century with many men and women of mark on both Continents. He knew well the Presidents and statesmen of the United States; prescribed for six Prime Ministers of England, as well as for its sovereigns and princes. But even in regard to information of moment which he might justifiably have given concerning them, he has been strikingly reticent in his "Recollections of Past Life."

Henry Holland, the son of Peter Holland, a much-respected medical practitioner, was born at Knutsford in Cheshire, on October 27, 1788. His maternal grandmother was a sister of Josiah Wedgwood, the eminent potter, and grandfather of Charles Darwin. Holland was also a cousin of Mrs. Gaskell, the author of "Mary Barton," and biographer of Charlotte Brontë. He was

educated first at Newcastle-on-Tyne under the Rev. W. Turner, and early showed his predilection for travel by making long pedestrian excursions in the neighbourhood. In 1803, he went for a year to Dr. Estlin's school, near Bristol, where he succeeded at once to the position of head boy, left vacant by John Cam Hobhouse, afterwards Lord Broughton, and where he also commenced his long friendship with Richard Bright, who has already been mentioned in this work. His classical and literary tastes here developed, and were further fostered by a vacation passed at Dr. Aikin's at Stoke Newington, and in the society of his sister Mrs. Barbauld and his daughter Lucy Aikin. Still, young Holland leaned towards a commercial life, and entered a Liverpool merchant's office, with the stipulation that he was to spend two sessions at Glasgow University. These saved him from being bound to a merchant's desk; for after his second session, 1805–6, he sought and obtained release, and took up medicine. At Glasgow he had become intimate with William Hamilton (afterwards Sir William), his discussions with whom had doubtless a considerable influence on his mental development. Holland's literary talent already began to show itself, for he was selected at the age of eighteen to draw up a Statistical Report on the Agriculture of Cheshire for Government, and received for it £200, double the sum proposed.

In October 1806, Holland entered at the Edinburgh

Medical School; but he did not confine himself exclusively to one school, for he spent two succeeding winters in the Borough Schools of London, Guy's and St. Thomas's, and in private study. Resuming at Edinburgh, he took his degree in 1811. Travel had already found him apt; in 1810 he went to Iceland with Sir George Mackenzie and Richard Bright, and contributed considerable portions to the narrative of the expedition. Holland early became associated with the Whig section of Edinburgh society, but he saw much of its general aspects, and he knew Walter Scott, Dugald Stewart, Francis Jeffrey, Henry Erskine, and many others known to fame. He had already made the acquaintance of Maria Edgeworth during a visit to Ireland; and her letters to him would in themselves fill a volume. Everywhere the bright pleasing intelligent youth was welcomed. As he could not yet be admitted by the College of Physicians owing to his lack of years, he undertook extensive travels on the Continent, venturing into little-known regions, and published his "Travels in Portugal, Sicily, the Ionian Islands, and Greece," in 1815, a work which yet further increased his fashionable repute. Mrs. Piozzi, writing from Bath in 1815, says, "We have had a fine Dr. Holland here. He has seen and written about the Ionian Islands, and means now to practise as a physician—exchanging the Cyclades, say we wits and wags, for the sick ladies. We made quite a lion of the man. I was invited to every

house he visited at for the last three days. So I got the *queue du lion*, despairing of *le cœur*."

Holland had spent much time in the military hospitals in Portugal during his travels, and gained valuable experience. In Turkey he came into contact with Ali Pasha, through whom he was deprived of most of his papers relating to Albania, a mortifying loss at the time. After his return home he speedily formed friendships with Lords Lansdowne, Aberdeen, and Holland, which continued uninterrupted save by death, and of course led to his intimacy with many other persons of note, traits in whose characters are recorded in the "Recollections." We cannot here follow the incidents of the brilliant social life into which Henry Holland entered with so much zest. Suffice it to mention that he was elected to the Royal Society in 1816, and admitted on the same day as Lord Byron, who on that occasion made his only visit. Henry Holland was an almost constant guest at Holland House. In the summer of 1814 he became domestic medical attendant on the Princess (afterwards Queen) Caroline, to accompany her during her first year of travel on the Continent. This situation became one of extreme delicacy, and its importance was very manifest at her trial years afterwards, where Dr. Holland's evidence, declaring that he had never seen anything improper or derogatory in her behaviour to Bergami or any other person, proved of extreme weight in her behalf.

A man of such connections could not fail to gain almost as much practice as he liked. His visits to Spa for four successive years, after the London season, strengthened his professional prospects, and his fourth year's practice brought him over £1200. In a few years he was able to resolve that his professional income should never exceed £5000, and that he would give to study, recreation, or travel all his surplus time. Thus happily placed, Henry Holland became the friend of every man of note, the patron of science at the Royal Institution, of which he was long president—but not the hospital physician, the clinical teacher, the original writer, the promoter of medical reform, or the habitué of the medical societies. He dined out, and never reproved his patients for the lapses from physiological prudence which he observed at the table. The "frequent half hour of genial conversation" was what he bestowed and was most capable of bestowing on his patients. Perhaps he thereby solaced their days of tedium or hypochondria as well as others who might have sought to root up their habits or impart tone to their minds with more ruthless energy. "When Lady Palmerston was suffering from an illness that occasioned some alarm to her friends," said the *Times*, in its obituary notice of Holland, "one of them, meeting the late Dr. Fergusson, asked anxiously how she was. 'I can't give you a better notion of her recovery,' was the reply, 'than by telling you that I have just received my last fee, and that she is now left entirely to

Holland.'" On this being repeated to Lord Palmerston his lordship mused a little, and then said, "Ah! I see what he means. When you trust yourself to Holland, you should have a superfluous stock of health for him to work upon." Holland himself had this superfluous stock of health. When over eighty he writes: "A frequent source of amusement to myself is my incapacity for walking slowly; and the sort of compulsion I even now feel to pass those immediately before me in the street, and to take the diagonal instead of the two sides of a square, whenever this is the alternative. When I cease to take the diagonal (often a dirty one) instead of the side pavements, I shall consider that I have gone a step downwards in the path of life." His excursions were almost all taken alone; but he evidently seldom put himself out of the reach of general society, as good as the neighbourhood afforded. He was no recluse, yet apparently not a man of a few warm strong personal friendships. If he was we find no record of it. From his utter reticence about his medical contemporaries, we should judge that he did not at bottom appreciate them as they deserved.

To give briefly a few of the more notable dates in Holland's life, he married first, in 1822, a Miss Caldwell, who died in 1830, leaving two sons, the present Sir Henry Holland and the Rev. F. J. Holland; and secondly, in 1834, Saba, daughter of Sydney Smith. He was made Physician Extraordinary to the Queen in 1837; Physician in Ordinary to the Prince Consort in

1840; was offered, but declined, a baronetcy by Lord Melbourne in 1841; was made Physician in Ordinary to the Queen in 1852, and accepted a baronetcy in 1853. In later years he withdrew altogether from practice, but continued active in society and persevering in travel. In his last journey, to Russia, he was accompanied by his son, the Rev. F. J. Holland; on his way back he attended the trial of Marshal Bazaine at Versailles on the 24th October 1873, dined the same day at the British Embassy, returned to London the next day, did not go out on Sunday the 26th, and died quietly in bed on the 27th, on the 85th anniversary of his birth.

To this extraordinary age lived the man who had been seen in all climates, in the Arctic Circle or in the Tropics, on the Prairies or the Pyramids, in the same black dress coat in which he almost ran from house to house at home. Sydney Smith said of him that he started off for two months at a time with a box of pills in one pocket and a clean shirt in the other—occasionally forgetting the shirt. Let Sir Henry tell his own tale of his enjoyment. "The Danube I have followed, with scarcely an interruption, from its assumed sources at Donau-Eschingen to the Black Sea—the Rhine, now become so familiar to common travel, from the infant stream in the Alps. The St. Lawrence I have pursued uninterruptedly for nearly two thousand miles of its lake and river course. The waters of the Upper Mississippi I have recently navigated for some hundred

miles below the falls of St. Anthony. The Ohio, Susquehanna, Potomac, and Connecticut rivers I have followed far towards their sources; and the Ottawa, grand in its scenery of waterfalls, lakes, forests, and mountain gorges, for three hundred miles above Montreal. There has been pleasure to me also in touching upon some single point of a river, and watching the flow of waters which come from unknown springs or find their issue in some remote ocean or sea. I have felt this on the Nile at its time of highest inundation, in crossing the Volga when scarcely wider than the Thames at Oxford, and still more when near the sources of the streams that feed the Euphrates, south of Trebizond." Altogether Sir Henry estimated that he had spent twelve years of his life in foreign travel.

Literary work was a pastime with Holland, and both in the Quarterly and the Edinburgh Reviews he delighted to show his extensive reading, and his enlightened yet very unrevolutionary views. His more interesting reviews have been published as "Scientific Essays," and "Chapters on Mental Physiology;" while his "Medical Notes and Reflections" constitutes almost all his practical contribution to medical science. Interesting "Fragmentary Papers" were published posthumously. In the "Medical Notes" certain current questions were philosophically discussed in a most pleasing style, and some questions of practice treated with some originality if not with boldness. Two chapters may be especially alluded to as valuable,

namely, those "On the Abuse of Purgative Medicines," and "On Bleeding in Affections of the Brain." Many of his chapters on Mental Physiology show wide observation and kindly insight into the relations of mind and body. But after all it is by his "Recollections of Past Life" that Holland will be most known, his sketches of the leading personages, politicians, wits, and scientific and literary men having a charming vividness and truthfulness about them, making every one regret that so many limitations were imposed by the author upon himself when he might have easily furnished so much more material for history.

Holland was of the middle height, spare in appearance, but very active; with a countenance not indicative of the highest mental power.

## CHAPTER XIV.

### *SIR WILLIAM FERGUSSON AND CONSERVATIVE SURGERY.*

THE association of the word "conservative" with operative surgery, so strongly identified in the popular mind with the removal of portions of the body, needs some explanation to the non-professional reader. In former times inflammation with denudation of bone was commonly believed to necessitate amputation; and diseased joints, especially the elbow, knee and ankle, with ulceration of cartilages, were generally considered incurable, except by removal of the limb. As Fergusson said, the ways of surgery get grooved; they are hallowed in the estimation of some. The man who steps from the groove is held to be rash and is called to account. How much this was the case will be seen by the reception accorded to conservative surgery, which aspired to do away with many of the radical proceedings of the past.

The term "conservative surgery," as first used by Sir W. Fergusson in 1852, meant operations for the preservation of some part of the body, which would otherwise have been unnecessarily sacrificed. A smaller

and more limited operation was undertaken to remove simply the incurably disorganised portion of the body, such as a diseased joint, and not an entire limb. Thus Fergusson said, "a compromise may be made, whereby the original constitution and frame, as from the Maker's hand, may be kept as nearly as possible in its normal state of integrity." "No one can more thoroughly appreciate a well-performed amputation than I do, but I certainly appreciate more highly the operation which sets aside the necessity for that mutilation."

Two great surgeons thus bear testimony to Fergusson: "The improvements which he introduced in lithotrity and in the cure of cleft-palate may almost be considered typical," says Sir Spencer Wells,* "of the school of modern conservative surgery, and will long be acknowledged as triumphs of British surgery in the reign of Victoria." He was, in the words of Sir James Paget, "the greatest master of the art, the greatest practical surgeon of our time."

WILLIAM FERGUSSON was born on March 20th, 1808, at Prestonpans, East Lothian, and was educated first at Lochmaben in Dumfriesshire and afterwards at the High School of Edinburgh. At fifteen he entered a lawyer's office, by his own desire, but soon found that law did not suit him, and at seventeen exchanged law for medicine, which profession his father had wished him to adopt. He was early attracted by the teaching

* Surgery, Past, Present and Future, 1877.

of Robert Knox, the celebrated anatomist, who quickly discerned the stuff his pupil was made of. Fergusson would often spend from twelve to sixteen hours a day in the dissecting-room. One of his dissections of the nerves of the face, preserved in the museum of the Edinburgh College of Surgeons, remains an admirable example of manipulative skill and dexterity, and the stand on which it is placed is also a specimen of his work. At twenty Knox made him demonstrator to his class, which then numbered four hundred. He had previously assisted John Turner, Professor of Surgery at the College of Surgeons. At the early age of twenty-one Fergusson became Fellow of the College of Surgeons by examination. Knox then promoted him to a share in his lectures on general anatomy, and the young lecturer also gave demonstrations on surgical anatomy, which proved highly valuable. He soon began to manifest his skill in operative surgery, and in 1831 he was elected surgeon to the Edinburgh Royal Dispensary, and showed his boldness by performing the important operation of tying the subclavian artery, which as yet had only been twice done in Scotland. In 1833 he married Miss Ranken, heiress of the estate of Spittlehaugh in Peeblesshire. This marriage, while it placed him beyond pecuniary difficulty, had no effect in diminishing his industry. In 1839 he became surgeon to the Royal Infirmary, and Fellow of the Royal Society of Edinburgh, and already shared the highest surgical practice with Syme. In fact there was hardly

room for two such men in Edinburgh. Liston had betaken himself to London. In 1840 Fergusson followed his example, accepting an invitation to King's College, which was now establishing its hospital. At a farewell presentation, Lizars said that he had seen no one, not even Liston himself, surpass Fergusson in the most trying and critical operations. The man of whom this could be said at the age of thirty-two had every chance of success in London, even though he came thither with scarcely any personal friends to back him. Professor Partridge, his old friend, gave him a cordial introduction, and he established himself in Dover Street, Piccadilly, only to find that his first year's private practice did not exceed £100. Yet it cannot be denied that Fergusson came to London at a fortunate period. Within a few years death or retirement withdrew from practice many of the most capable operators, such as Liston, Aston Key, and Astley Cooper. Thus his success was really rapid, for his third year brought him £1000, and in 1847 he removed to a large house in George Street, Hanover Square. His style of operating soon attracted general attention both among students and practitioners, and King's College operating theatre became the resort of all the medical students and practitioners who could cram into it.

As an operator Fergusson was most peculiarly skilled, and he appears to have had a natural manipulative dexterity, which he assiduously cultivated. Like Sir Charles Bell and other eminent surgeons, he was a

splendid fly-fisher; and his manipulation served him in good stead in acquiring skill on that most difficult of instruments, the violin. Carpentering and metal-working came easily to him, and gave him great readiness in improvising splints or other apparatus desirable for his patients' special circumstances. Yet having such power and dexterity, he did not choose to display it on all possible occasions, but rather was conspicuous for his frequent abstinence from operative interference, counting it a greater glory to save a limb than to cut one off, and taking endless trouble to preserve a portion when amputation would have been much easier.

Although the rivalry between Fergusson and Syme frequently led to open dissensions, yet no man more freely, fully, and repeatedly acknowledged Syme's great services than Fergusson. Thus he always ascribed the chief merit of the revival of the "conservative" operation of excision of the elbow-joint to Syme. Originally suggested by Park, and first performed by Moreau, it was not until the operation was taken up by Syme that it attracted serious attention. Fergusson followed in his wake, and extended the same principles till there was scarcely a part which could be conserved which he had not laid hands on with that object. To take an instance from parts of small size. A gentleman of active habits, in charge of a large establishment, to whom the use of a pen was of vast importance, had a bad whitlow at the end of his right thumb. An

abscess was opened in due time, and the bone was found bare. Amputation was urged, but the patient objected, and on consulting Fergusson, he was advised to wait, and then a few weeks afterwards the portion of bone that died was removed through the original opening for the abscess. Before long, the thumb, apparently entire, was as useful as ever. "Opinions may differ," says Fergusson, "but for my own part, I deem it a grand thing when by prescience even the tip of a thumb can be saved."

To Liston's boldness and rapidity Fergusson added greater caution and self-control. In lithotomy both were equally distinguished, and attained their end with the simplest instruments. An anecdote recorded in the *Medical Times and Gazette* (Feb. 17, 1877) illustrates this. Some practitioners were discussing the relative merits of some leading hospital surgeons, and introduced the subject of lithotomy. "I saw Mr. —— perform lithotomy to-day in half a minute." "Oh," replied B, I saw —— once extract the stone in twenty seconds." "Have you ever seen Fergusson perform lithotomy?" "No." "Well then, go; and, look out sharp, for if you only even wink, you'll miss the operation altogether."

In 1845 Fergusson revived the plan of excising the head of the femur for incurable disease of the hip-joint, and it became established as a valuable operation, in spite of Syme's violent opposition. In 1847 Mr. Fergusson excised the entire scapula, where the whole

arm would otherwise have been sacrificed. In 1850 his attention became concentrated on diseases of the knee-joint, and before long he excised the joint for severe disease. Although the result was unfavourable, Fergusson, undismayed, repeated the operation successfully, and in spite of strong criticism and opposition, continued for at least fifteen years, it has become established. The strength of the feeling aroused on this subject was so great that once when Fergusson was about to excise a knee-joint at King's College Hospital, a surgeon, once a colleague, publicly protested against the performance of the operation. Fergusson's earlier cases were not always well selected for the operation, and he had many disheartening failures. But he persevered and improved in his selection of cases, and achieved what he regarded as the greatest triumph of conservative surgery.

Some of Fergusson's greatest triumphs were in connection with hare-lip and cleft-palate. His first formal operation in surgery was for hare-lip in 1828. Up to 1864 he had operated on nearly four hundred cases with only three deaths. The adoption in 1850 of a spring or truss to push the sides of the lips forwards, invented by Jem Hainsby (the old dissecting-room attendant at Guy's), and the father of a child-patient, was of great value in preserving the mobile parts of children from undesirable movements. In regard to cleft-palate Fergusson's labours were of even greater value, for he discovered by careful dissection the reason

why the edges of the wound were so often prevented from uniting, and by dividing the muscles concerned, in addition to other valuable improvements in practice, he enabled many patients to gain an excellent undivided palate. Up to 1864 he had operated on 134 cases, of which 129 were successful, and only two failed entirely. It is unnecessary to go through the long list of successes won by Fergusson; but it is well to mention that when he found the existing instruments unsuitable for his purpose, he never rested till he had invented better ones. The bull-dog forceps, the mouth-gag for operations on the palate, various bent knives, and many other instruments and apparatus bear the stamp of his inventive skill.

With all his operative brilliancy, that did not constitute Fergusson's chief claim to admiration, nor was it the principal cause of his success. The perfect planning of the operation beforehand from beginning to end, down to the smallest detail, and being ready for every possible emergency with the precise method for meeting it, distinguished him most. Consequently he neither hurried, wearied, nor hesitated when he began. Things were so perfectly planned, his assistants so well drilled, that not a word needed to be spoken, and this produced a curious appearance at times, so that it was often remarked that he must be on bad terms with his assistants. He left no detail unsupervised, and completed the operation entirely himself, even applying bandages and plasters. His coolness under

difficulty was probably connected with his forethought; he could often cover his own or others' mistakes in the coolest manner, and this put him in the best position for remedying them. It was his pride never to be late. He hated unnecessary waste of time, and once when a friend intending to tie a large artery had laid it bare by a fine dissection, and was showing it with natural gratification, Fergusson called him to the point by remarking, "Jist put a thread round it." So when a large artery had been wounded, and an assistant eagerly tried to stop the bleeding with his finger, Fergusson said: "Jist get your finger out of the way, mon, and let's see what it is," and satisfactorily tied the vessel.* He was remarkably neat too in his completion of an operation, and could not bear to leave any traces behind, either in hospital or private house.

In the subjects which he had thoroughly studied and on which he had practical experience Fergusson was a master. This is seen in his "Practical Surgery," which reached a fifth edition in 1870, and in his lectures on the Progress of Anatomy and Surgery delivered at the College of Surgeons in 1864 and 1865. But as a systematic lecturer he did not achieve great success, nor was he conspicuous as a bedside teacher owing to his reticent manner. It was in operating that he shone most, and in his remarks on operations; to see him operate was for the student or practitioner already instructed what to observe a lesson full of

* Henry Smith, Biographical Sketch of Sir W. Fergusson.

practical value. On some important questions he was imperfectly informed, and this was proved when he opposed the movement for securing a pure water supply to large towns, and favoured the anti-vivisectionists in some remarks and evidence which showed considerable ignorance of physiological discovery and progress. Again, his attitude towards homœopathic practitioners largely compromised his influence at one time.

Fergusson's social instincts as well as his personal sympathies won him favour from all classes, and his male as well as his female patients felt deeply his kindly attentions, while children simply worshipped him. His practice was always to treat a hospital patient with exactly the same consideration as one in private. Mr. Henry Smith records the profound impression made upon him as a young student by his remarkable kindness and gentleness towards a little lame boy. It is not to be wondered at that he inspired his patients with the utmost confidence, an art that many equally clever have lacked. A gentleman who came to London to have an enormous tumour of the lower jaw removed, saw several eminent surgeons, but chose Fergusson as the operator without hesitation. "Directly he put his hands upon me," said this gentleman, "to examine my jaw, I felt that he was the man who should do the operation for me; the contrast between his examination and that of others was so great." As Mr. Henry Smith says, "Fergusson not only shone pre-eminently as an operator, but he

possessed a profound knowledge of his art, and wielded all its resources with consummate skill. His powers of observation were remarkable; his memory was most tenacious; his shrewdness, sound common-sense, tact and knowledge of men, and how to deal with them, were acknowledged by all; and conspicuous amongst them was that facility of resource in all trying emergencies, which, added to his extraordinary mechanical skill, made him what he was, and brought about a success which has seldom been vouchsafed to any surgeon."

Fergusson became M.R.C.S., Eng., in 1840, and Fellow in 1844. He was appointed Surgeon to the Prince Consort in 1849, and Surgeon-Extraordinary to the Queen in 1855, and Sergeant-Surgeon in 1867. In 1861 and again in 1868 he was elected to the Council of the College of Surgeons, notwithstanding the strong opposition of the existing council on the first occasion. In 1867 he became an examiner in surgery, and in 1870 President of the College. His lectures as Professor have already been mentioned. We may add that he was President of the Pathological Society in 1859 and '60, and of the British Medical Association at its brilliant London meeting in 1873. His many other appointments and distinctions must be passed over, with the exception of the baronetcy, which he received in 1866.

Fergusson never tired of work. His fine energies kept him ever fresh. He could sing, or dance a Highland reel, with energy long after middle age, and when just returned from a prolonged and tiring journey

He was a munificent patron of literature and the drama; attended many an author without fee, and would not unfrequently pay for their lodging near him in cases where that was desirable. His spirit of hospitality was lavish, whether in London or at his seat at Spittlehaugh in Peeblesshire. He was ever ready to show kindly feeling towards even those who censured him most severely, and his forgiving nature was many times most conspicuously evident. Whenever he had any consciousness of having done or said anything calculated to wound another's feelings, old or young, he never rested until he had made reparation in some way. He held a truly modest estimate of himself, was unspoiled by popularity, and never became at all overbearing. He was a staunch friend, to old pupils especially, and a liberal helper of members of the profession generally. Many a surgeon who has risen has owed to him essential help. Indeed, he displayed the best Christian characteristics, and was, in Mr. Henry Smith's words, "the true type of a Christian gentleman." He died in London, after an exhausting illness, of Bright's disease, on February 10th, 1877, and was buried at West Linton, Peeblesshire, where his wife had already, in 1860, been buried. A portrait of him by Lehmann was presented by subscription to the London College of Surgeons in 1874, and a replica is in the Edinburgh College of Surgeons. His best monument is in the life and work of the multitude of his pupils, whom he influenced and stimulated as few have ever done.

## CHAPTER XV.

### *SIR JAMES SIMPSON AND ANÆSTHETICS.*

FUTURE ages will perceive in the history of medicine and surgery in the nineteenth century no more remarkable event than the discovery and the introduction of means for relieving and temporarily abolishing pain. And although the name of Simpson is by no means the only one honourably associated with this discovery, his achievement in the introduction of chloroform places him on an enviable pinnacle of greatness.

JAMES YOUNG SIMPSON, the seventh son and eighth child of a small baker, was born at Bathgate, Linlithgowshire, on the 7th of June 1811. His birth took place when his father's circumstances were at the lowest ebb. Several of the family, including his mother, had but just recovered from fever. The mother had to rise from her maternal pain to take an active part in business, which she did most energetically and successfully. Her religious character and her thrifty habits deeply impressed the little boy, and he pleasingly recalled in after years her injunction, when she had just darned a big hole in his stocking, "My

Jamie, when your mother's away, you will mind that she was a grand darner." She died when James was but nine years old, leaving him in the care of his only sister Mary, eleven years older, who proved a tender foster mother. Already as a child James Simpson became known as "the wise wean," "the young philosopher," and his voice was sweet and silvery. His industry and retentiveness of memory early gave promise of distinction, which all the family were persuaded would fall to his lot. And he would readily, book in hand, keep the shop for a time, or run with rolls to the laird's house. "I remember," says his brother Alexander,* "finding him sitting in the street on a very dusty day, sobbing bitterly, the tears running down his cheeks covered with dust. 'What ails you, Jamie?' I said, and he answered, sobbing as if his heart would break, 'I've broken the pony's knees.'" It turned out that Alexander himself had overridden the pony, so that it could not help stumbling.

The father of the family trusted his children in a peculiar way. All were regarded as equally concerned in the family prosperity, and the shop till was unfastened, and free to all; each habitually thought of the general good first. In this way the household prospered ever after James's birth, and he personally received unremitting attention.

At the age of fourteen James Simpson entered

* Memoir of Sir James Y. Simpson, by J. Duns. Edinburgh, 1873.

Edinburgh University, "a very very young and very solitary, very poor and almost friendless student," as he himself said forty years after. For two years he pursued classical and mathematical studies, gaining a small bursary before his second session. One of his earliest purchases was a little book on "The Economy of Human Life," for which he gave ninepence. An extract from it which he wrote in his cash-book is significant of his temper of mind: "Let not thy recreations be expensive, lest the pain of purchasing them exceed the pleasure thou hast in their enjoyment." Though an economical student, however, his literary tastes were wide, as he early bought Byron's Giaour and Childe Harold, and Paley's Natural Theology. He lodged with Dr. Macarthur, a former usher in the Bathgate School, together with John Reid, an old schoolfellow, afterwards Professor of Anatomy at St. Andrews, in the upper flat of a tall house in Adam Street. Reid's enthusiasm for anatomy seem to have first inspired Simpson to choose medicine as a profession.

In the winter of 1827 James Simpson entered as a medical student in the University, and, attending Liston's class on surgery, soon became conspicuous. He took full notes of lectures, and was freely critical of his teachers. He became a dresser under Liston, and received excellent testimonials from him. But he shrank from surgery, having an exquisite tenderness of heart which almost drove him from the profession.

After witnessing on one occasion a poor woman's agony under amputation of the breast, he started off directly to seek employment as a writer's (or lawyer's) clerk. He soon returned, however, deeply imbued with the desire to do something to render operations less painful. Simpson's summer vacations were passed at Bathgate, natural history and antiquarian pursuits occupying his spare time. In January 1830, just before he was going up for his license to practise, his father died after some weeks' illness, during which James constantly watched at his bedside. Such an interruption to study at a critical moment might have upset so sensitive a mind. But Simpson went in for his examination in April, and became a member of the Edinburgh College of Surgeons before he was nineteen years of age. His brother Alexander, who, with the rest of the family, furnished faithful and persevering help to the young brother of whom so much was expected, gave him a home while he looked out for some post to occupy him while waiting for his Edinburgh degree, which his youth prevented him from taking as yet. One of the situations which he sought was that of parish surgeon in a little village named Inverkip, on the Clyde. "When not selected," he writes long after, "I felt perhaps a deeper amount of chagrin and disappointment than I have ever experienced since that date. If chosen, I would probably have been working there as a village doctor still."

In 1831 Simpson returned to his university studies, his brother David having commenced business in Stockbridge, Edinburgh, and being able to accommodate the young doctor. He assisted in maintaining himself by becoming assistant to Dr. Gairdner. Thus he was enabled to complete his university course and take his M.D. degree in 1832, giving as his inaugural thesis an essay on "Death from Inflammation." This attracted much attention, especially from Dr. John Thomson, Professor of Pathology, who at once requested him to act as his assistant with a salary of £50, which the young man made sufficient for all his necessities. In this capacity he prepared a catalogue of the museum of the pathological department. His first experience of obstetric study in attending Professor Hamilton's lectures had not left his mind under a compulsion to pursue the subject deeply, but Dr. Thomson saw that his assistant, soft-mannered but full of decisive activity, was the very man to succeed in midwifery practice, and he therefore advised him to devote himself specially to it. Another great characteristic was his power of winning the confidence of others, and especially of getting his patients to tell him what it was most important that he should know. But he went immediately to work to become learned in his subject, and then to turn over in his mind everything that he had learnt, until it assumed a new aspect. He always sought new and better ways, and if any department of practice or theory appeared to him defective, he restlessly applied his mind to

invent or imagine some improvement. And he had an absorbing desire to gratify his family by achieving success. When his sister Mary told him in 1834 he was injuring his health by overwork, he replied, seriously, "Well, I am sure it's just to please you all."

Simpson's first important paper, on the Diseases of the Placenta, delivered before the Royal Medical Society in 1835, at once showed a master hand. It was translated into French, German, and Italian. He began by exhaustively studying the previous history of every subject he took up, and then tested others' opinions and facts by his own observation. One of his earliest papers includes nearly one hundred references to previous literature, including many authorities, showing an unusual range of reading. If he could not read the language of an author he got some one who could to do so, and give him the material bearing on his point of inquiry. But while no man regarded more highly than he the patient achievements of the past, no man sat more loosely to tradition and convention.

In 1833 Simpson became a member of the Royal Medical and Physical Societies of Edinburgh. Of the former he was soon President. A writer in the *Scotsman* for May 10, 1870, thus described his appearance in that capacity. After speaking of his long tangled hair, and very large head, he says: "A poet has since described him as one of 'leonine aspect.' Not such do we remember him. A pale, large, rather flattish face, massive, brent brows, from under which

shone eyes now piercing as it were to your inmost soul, now melting into almost feminine tenderness, and coarsish nose, with dilated nostrils, a finely-chiselled mouth, which seemed the most expressive feature of the face, and capable of being made at will the exponent of every passion and emotion. Who could describe that smile? When even the sun has tried it he has failed, and yet who can recall those features and not realise it as it played round the delicate lines of the upper lip, where firmness was strangely blended with other and apparently opposing qualities? Then his peculiar, rounded, soft body and limbs, as if he had retained the infantile form in adolescence, presented a *tout ensemble* which even had we never seen it again would have remained indelibly impressed on our memory."

In 1832 Alexander and Mary Simpson both married. Alexander's wife, however, became as attached as his sister to James, and there was no interruption to the family helpfulness. When cholera appeared in Bath-gate, Alexander made a will securing a provision for James if he died. "I trust," wrote this true brother, "every one of you will look to him. But I dare say every one of you has a pleasure in doing him good by stealth, as I have had myself." The brothers Alexander and John enabled James to visit London and the Continent in 1835 to see a variety of practice; his travelling companion was Dr. Douglas Maclagan, afterwards Professor of Medical Jurisprudence at Edinburgh. On his return Simpson gained some

practice, but chiefly among those who could pay him little or nothing. In May 1836 he obtained the situation of house-surgeon to the Lying-in Hospital, which he held for a year. This soon led to an increase of practice among better-paying patients. He now gave some courses of lectures on Midwifery in the Extra-Academical School, which were well received, besides being appointed interim lecturer on Pathology, when his friend Dr. Thomson had resigned. He gave great labour to the preparation of his lectures, besides continuing to publish original papers on Midwifery. At this time he rose repeatedly at three in the morning, when he did not sit up all night. But with all his work he found time for social enjoyment, for family interests, for messages to old schoolfellows in humble life.

Neither now nor at any time did Simpson lose his habit of plain speech. He did not always conciliate others by his outspoken expressions, and he did not care to wrap up unpleasant truths in honeyed words. In 1839 some hasty words which passed between Simpson and Dr. Lewins of Leith in reference to an anonymous letter written by the latter, nearly led to a duel; but, fortunately, friends were able to persuade them that both were to blame, and an amicable reconciliation was effected. In the same year, that in which also he had commenced housekeeping on his own account, Simpson became a candidate for the Chair of Midwifery, vacated by Dr. Hamilton's resignation. The contest was a very severe one, Dr. Evory Kennedy of

Dublin having strong claims. Simpson strained every nerve to secure testimonials and to influence electors, publishing an octavo volume of testimonials, extending to more than 200 pages. He was finally elected Professor on the 4th February 1840 by a majority of one vote only, at the age of twenty-eight, with no advantages of social position or long experience to back him. A few weeks previously (December 26, 1839) he had married his second cousin, Miss Jessie Grindlay, of Liverpool, to whom he had long been attached.

But difficulties were not over when the election had taken place. The pecuniary cost of the canvass was about £500, chiefly in printing and postage; and Simpson had less than no money; he was considerably in debt to his relatives. His new colleagues had to a large extent opposed him, preferring Dr. Kennedy; they continued to oppose him, not fancying their association with a small baker's son. Practice began to flow in, but it necessitated taking a larger house, keeping a carriage, and much greater expenditure; and it was some time before the young couple could make both ends meet. Demands from old friends or from poor people for help, crowded on Simpson faster than fees; and his kindly heart did more for them than sober judgment would warrant. He frequently sat up all night writing for the press. He was beset remarkably early by philanthropic projectors, self-interested promoters, young aspirants to fame, and men anxious to bring forward a pill calculated to make people live to

the age of Methusaleh, or desirous of the Doctor's interest to get them permission to fish in one of his patients' streams. Nervous headaches and acute pains began to cast their horrible shadows over his life; but work was scarcely ever remitted. His lectures were immediately a great success; he had the largest class in the University. Additional seats had to be supplied, and then there was not room for all to sit. His cares had meanwhile been increased by the birth of a daughter, a fortnight before the session began.

Simpson's untiring activity could not content itself, however, with strictly professional subjects. Before the end of his first session of professional lectures, he began to work at a memoir which received the title of "Antiquarian Notices of Leprosy and Leper-Houses in Scotland and England." In it he makes nearly five hundred references to out-of-the-way authorities, and in the appendix is a list and notices of one hundred and nineteen leper-houses which he had traced in Britain. The memoir is a mine of valuable antiquarian information.

By the end of 1842 his pecuniary position was assured beyond all doubt, although his benevolence would have made this difficult had not his skill become so famed. His success when little over thirty years of age was marvellous; the hotels were filled with his patients, and his practice was said to be worth many thousands of pounds a year to these establishments. His house had to be enlarged to receive some who

insisted on remaining in the closest proximity to the great doctor. But in the whirl of practice one fault became prominent. Methodical and exhaustive in his literary researches, and possessed of a powerful memory, he could not be persuaded to make systematic notes of his appointments, and seemed to be incapable of so planning out his time as to spend it to the greatest advantage for his patients. He not unfrequently forgot a definite appointment, and was sometimes overpersuaded by pushing people or by professional friends to attend to cases out of their proper turn. That he ever consciously did any one an injustice either for pay or without it is quite untrue. But he was blamed as if he had. He was indeed only too careless about money, and frequently too regardless of his own interest to demand a proper fee. His receipts were stuffed at once into his pockets, which were emptied at night, he knowing nothing of their contents before. Sometimes a fee was received in a letter, and neither taken out nor acknowledged. Once he received £10 thus, when a much larger fee might have been expected, and several notes of expostulation followed on his neglect to acknowledge its receipt. One stormy night Simpson was much disturbed in sleep by the rattling of a window. He got up, felt in his pocket for a bit of paper, and lighted on the £10 note, which was devoted to the tightening of the window-frame. On Mrs. Simpson discovering the nature of the bit of paper in the morning, he merely replied, "Oh, it's *that* £10."

A sample of ridiculous expostulations is the case where repeated letters asked Dr. Simpson's opinion whether three leeches should not be applied to a hip-joint, instead of two, which the family medical man recommended.

In the midst of practice and lectures, he found time to write or dictate many a brief or lengthy article on obstetric practice or diseases of women, always practical, always exhausting previous authorities. It was in this direction especially that his mind was ever at work. Then when he had come to a conclusion, he withheld no item of it. "Keen to perceive the truth," says the *Scotsman*,* he was equally vigorous in his announcement of it, and cared little to what cherished opinion his statements might run counter. Hence came contests where little quarter was given or received. He was a dangerous antagonist to meet at a joust, and though he could use the keen edge of steel, he oftener despatched his antagonist with a heavy mace of facts or figures, which those who had neither his industry nor his powers of memory could neither refute nor set aside. Hence he made many enemies, for he had run counter to many prejudices, and the old spirit which had opposed his election to the professorial chair cropped out ever and anon, showing that it was smothered, not extinguished."

It should ever be remembered that Simpson's greatness was established before he had introduced chloro-

*Scotsman*, May 9, 1870.

form, and depended on his unsurpassed skill in obstetrics and diseases of women, while yet he was a most accomplished general physician. Already, in January 1847, when he was only just beginning to study anæsthetics, he was made one of the Queen's Physicians for Scotland. We cannot here attempt a history of previous efforts to secure immunity or relief from pain, but it is evident Simpson was in this respect not a man marvellously in advance of his age; the subject was in the air; unceasing efforts at improvement were being made. Before the end of the last century the brilliant chemical discoveries of Priestley had led to his suggestion that drugs might be administered in definite quantities by inhalation through the lungs. Oxygen was the first gas inhaled for medicinal purposes; and in 1795 Dr. Pearson of Birmingham prescribed the inhalation of ether in cases of consumption, being followed ten years later by Dr. Warren of Boston, U.S.A. In 1800 Sir Humphry Davy, when superintending Beddoes' Pneumatic Institution at Bristol, founded principally for the medicinal inhalation of oxygen, began to study the effects of nitrous oxide, which he employed, after he had become familiar with its intoxicating effects, to relieve the pain of a severe inflammation of his own gums. In publishing his account of its successful inhalation he said, "As nitrous oxide in its extensive operation seems capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes

place."[1] Thus we must credit Sir Humphry Davy with the most original observation and experiment on the subject of anæsthetics: another instance in which the investigator seeking to advance science has made an observation and suggestion bearing on the welfare of the whole of mankind. His pupil and successor, Faraday, in 1818 announced that sulphuric ether vapour, when inhaled, produced similar effects to nitrous oxide. Here closes the record of anæsthetics for many years, practically we believe because medicine and surgery had not yet become sufficiently scientific to discern their value.

In 1835 Robert Collyer, an American medical student, inhaled ether at a chemical lecture by Professor Turner at University College, London, being himself made insensible, in company with other students; he noted that his fellow-students under its influence became insensible to pain. In December 1839, Collyer, near New Orleans, reduced a dislocation of the hip for one of his father's negroes who had fallen down in insensibility on inhaling the fumes of rum. The negro showed no sign of pain. Collyer soon after identified this narcotic state with that produced by mesmerism, under which also some operations were painlessly performed. Collyer lectured on these subjects in 1840 and subsequent years in Philadelphia, Boston, Liverpool, and other places. He made mesmeric and narcotising

[1] Researches, Chemical and Philosophical, chiefly concerning Nitrous Oxide and its Respiration. By Humphry Davy. London, 1800.

experiments, the latter with a mixture in which the vapour of alcohol with poppy seeds and coriander steeped in it was inhaled, and in 1842 he states that he administered his alcoholic mixture to a patient in Philadelphia, during tooth-drawing, with a painless result. In 1844 an American chemical lecturer named Coulton exhibited the properties of nitrous oxide at a lecture given at Hartford, Connecticut, at which Horace Wells, a dentist practising there, was present. Having a tooth which he himself wished to get extracted, Wells invited Coulton to administer nitrous oxide to him. This was successfully done, and during Wells' insensibility his tooth was removed by a friend, Dr. Riggs. Wells on recovering consciousness exclaimed, "A new era in tooth-pulling!" and at once attempted to introduce the practice at Hartford and at Boston; but not using the gas in purity, and not being sufficiently skilful in its administration, his attempts often failed, and at Boston he was hissed, and gave up his efforts in despair. Later, when anæsthetics had become firmly established, he again sought unsuccessfully to introduce nitrous oxide, and at last put an end to his life. It is sad to think of this fate for a man who, with a little more education and a little more perseverance, might have reaped a great harvest of fame.*

We cannot go into the controversy as to which American has the greatest merit in the introduction of sulphuric ether as an anæsthetic. Suffice it to mention

* *Lancet*, 1870, History of Anæsthetic Discovery.

that Charles Jackson, a chemist of Boston, who had been present at Wells' demonstration in 1840, first experimented on himself by inhaling pure sulphuric ether, and having produced insensibility, communicated his discovery to W. T. G. Morton, a dentist who had been present at Wells' demonstration, and prevailed on him to employ it. Morton afterwards alleged that this step was taken independently on his part.

On September 30, 1846, Morton administered ether to Eben Frost for tooth-drawing with complete success, and in October following it was used in an important operation by Dr. J. C. Warren at the Massachusetts General Hospital. The news arrived in England before the end of 1846, and on December 19th, James Robinson, a dentist of Gower Street, London, was the first to operate under ether in this country for the removal of a tooth. On December 21 Robert Liston employed it most successfully at University College Hospital in an amputation of the thigh and in the removal of a great toe-nail, one of the most exquisitely painful operations. Its general adoption followed in the first few months of 1847. Dr. Simpson, as early as January 9, 1847, after previously inhaling it himself, used it in order to relieve pain in childbirth, and found that its anæsthetic effects produced no stoppage or perceptible alteration in the muscular contractions of the womb. This and other cases of his were quickly published, and justify his claim to having introduced ether in its application to midwifery practice.

The inconveniences occasioned by the smell of sulphuric ether, the considerable doses required to be given, and its tendency to irritate the bronchial tubes, led Simpson to inquire for and to try other analogous liquids. He was recommended, among others by Dr. Gregory, to try chloroform, discovered by Soubeiran in 1831 and Liebig in 1832, and accurately investigated by Dumas in 1835., He concluded after much labour, and the expenditure of some hundreds of pounds, that chloroform, without the unpleasant smell of ether, produced more rapid effects with a smaller dose, and he very soon began to use it in midwifery and to introduce it to his surgical friends for operations. It was brought before the Edinburgh Medico-Chirurgical Society on the 10th November 1847; and so well known and favoured did it become that in a very short time Simpson's Edinburgh chemists were manufacturing 7000 doses a day. Here we might almost stop in this record, but for two things, one the controversies Simpson had as to the impropriety and irreligiousness of removing pain, supposed to be one of the Creator's ordinances which ought not to be mitigated; and the other, the deaths that began to occur under the administration of chloroform. As to the first, a specimen of the objectors is furnished by a clergyman, who wrote "that chloroform was a decoy of Satan, apparently offering itself to bless woman; but in the end it will harden society, and rob God of the deep earnest cries which arise in time of trouble for help." Even the relief of

pain in surgical operations was held by many to be unwarrantable. But a powerful counter-argument was found, in the much greater ease and certainty of success with which surgeons could now perform their operations when the cries and writhings of the patient were removed. The controversy that ensued, however, would fill a volume, and Simpson in it proved himself, as ever, a hard hitter.

For many years scarcely anything but chloroform was used for producing anæsthesia; but gradually numerous unexpected deaths under its administration led many to think that it had too depressing an effect on the action of the heart, in some cases at least, and led to the trial of other agents, including bichloride of methylene, the reintroduction of ether, and nitrous oxide. The two latter are very largely used at present, and so also is a mixture composed of one part by measure of alcohol to two of chloroform and three of ether, also known as the A.C.E. mixture, from the first letters of the three constituents. This is now considered by many to be safer than chloroform. What will be the judgment of future experience we can have no pretensions to decide.

We cannot give in detail the subsequent events of Dr. Simpson's life. It became more busy and active, more benevolent, and more distinctly religious as years went on. He refused advantageous offers to settle in London, and instead patients came from all parts of the world to consult him in Edinburgh. His

hospitality was unbounded. His daily breakfasts and luncheons have been graphically described by a well-known poet. "Assembled unceremoniously in a moderate-sized room, with little in common save the wish to meet their host, you found a company drawn together from every latitude and longitude, social and geographical. Of all this motley party there is probably hardly one who is not notable, and the grades and classes of eminence run through the whole gamut of social distinction from duchesses, poets, and earls, down to the author of the last successful book on cookery, the inventor of the oddest new patent, a Greek courtier, a Russian gentleman, or a German count. At your elbow the last survivor of some terrible shipwreck is telling his story to the wife of that northern ambassador, who is meeting, with the softest Scandinavian dialect, the strong maritime Danish of the clever State secretary opposite. Behind you a knot of American physicians, just arrived, are discussing in a loud voice, a speech in Congress, or agreeing, *sotto voce,* on the particular professional topic upon which they have come to consult the great authority. Turn for a moment from this sculptor, who is waiting to ask the opinion of the many-sided professor on the sketches which he is now showing to that portrait-painter, and to learn which of them shall be done in marble for the nobleman whose attention the doctor has found time to direct to the rising young artist, and you may catch something of yonder violent dis-

cussion between those arrivals from Australia, who have come from the land of gold in search of what gold cannot buy."

But it is by no means only in connection with ether and chloroform that Simpson introduced a new practice. Besides numberless suggestions and novel ideas in midwifery, he brought forward (in 1859, after some years of study) a totally new method of closing arteries after operations and in substitution for ligatures, so often the cause of inflammation. Long before John Hunter had pointed out that needles and pins when passed into and embedded in the living body seldom or never produced any inflammatory action. Simpson was struck with the idea that slender sharp-pointed needles or pins of non-oxidisable iron, somewhat like hare-lip needles, might be used to close together the walls or flaps of wounds, at the same time keeping the blood-vessels closed. These pins could be withdrawn very early, and would greatly favour healing at the earliest possible moment. The new method, called acupressure, of course met with much opposition, and Simpson was severely censured for meddling in a preserve strictly limited to the surgeon. But the help of the Aberdeen surgeons, Keith and Pirrie, was of great service in promoting the fair trial of the practice. His attack on the prevailing hospital system in 1869 was one of his later crusades, and he certainly accumulated a great store of facts showing the unhealthiness of the existing conditions of aggregation in crowded

hospitals. His advocacy of a separate system in hospital construction, and of limiting the number of patients close together, of course drew on him further fierce opposition. We cannot here refer to his strong exposure of the fallacies of homœopathy, his vigorous actions in connection with the University of Edinburgh, or the numerous antiquarian papers which his prolific pen gave forth. Every year had crowded into it three times as much research as a very industrious man could manage, ten times as much controversy, and twice as much practice. Honours came thick upon him. In 1856 he was greatly gratified by the French Academy's award of the Monthyon Prize of 2000 francs for "most important benefits done to humanity." At the beginning of 1866 he was created a baronet. In 1869 the freedom of Edinburgh was presented to him.

Heavy affliction came now and again to embitter his life. Several children were taken from him in the prime of their life, including his eldest son, who showed great promise of a brilliant medical future, but was cut off within a fortnight after his father was made a baronet. In later life he became an ardent church worker, having joined the Free Church of Scotland when the Disruption took place. 1870 found the vital machine much out of order. Heart pain—*angina pectoris*—so often the scourge of medical men, came more frequently with its terrible strain. But he never relaxed his work in the intervals, until

absolutely compelled. In one of his later conversations he said, "How old am I? Fifty-nine. Well, I have done some work. *I wish I had been busier.*" One of his expressions showed his distaste for theology. "I like the plain simple Gospel truth, and don't care to go into questions beyond that." During almost his last night he was inexpressibly comforted by having with him his brother Alexander, who had watched over him with such tenderness from childhood. He sat on the pillow with Sir James's head on his knee, and the sufferer again and again slowly uttered the words, "Oh, Sandy, Sandy!" He died on May 6, 1870. He would have been buried in Westminster Abbey but for his own express wish to be buried in Warriston Cemetery, Edinburgh. His funeral was such as Edinburgh had, it is said, never witnessed before, business being generally suspended. His widow survived him but a few weeks, dying on the 17th June following. His eldest surviving son, Walter Grindlay succeeded him in the baronetcy.

## CHAPTER XVI.

### *SIR SPENCER WELLS AND OVARIOTOMY.*

THOMAS SPENCER WELLS, whose career in the revival of the operation of ovariotomy has attracted very widespread attention and interest, was born in 1818, being the eldest son of Mr. William Wells of St. Alban's, Herts.

Without being formally apprenticed, he enjoyed many of the advantages of the old apprenticeship system, under an able country practitioner, Michael Thomas Sadler, of Barnsley, Yorkshire. Subsequently he spent a year with a parish doctor in Leeds, attending the Leeds Infirmary, and Hey's and Teale's lectures. The session 1837–8 was passed in Dublin, and there Graves and Stokes largely influenced the young surgeon. Continuing his course of culture in varied fields, he went to St. Thomas's, London, and was a zealous pupil of J. H. Green, Travers, and Tyrrell. Here he obtained a prize for the best reports of *post mortem* examinations. Becoming a member of the College of Surgeons in 1841, he entered the navy as assistant-surgeon, and spent six years in the Naval Hospital at Malta.

In 1853 Sir Spencer Wells settled in practice in London, and in 1854 became attached to the Samaritan Hospital, then a dispensary for the diseases of women. At this time Sir Spencer states he knew less of this branch of the profession than of any other. In his younger days he had attended an unusual number of midwifery cases, but latterly his practice had been almost exclusively surgical, with a strong tendency towards ophthalmic surgery. It was at this time that he first became interested in the subject that has made his name so widely known.

From time immemorial the ovaries of women have been subject to diseased growths and fluid accumulations, for which there was scarcely a remedy, except when fluid could be drawn off through one or more punctures, and fatal results were the almost inevitable sequel of these diseases. Towards the end of the seventeenth and beginning of the eighteenth centuries, several medical men proposed to remove the diseased organ by an incision in the front wall of the abdomen. William Hunter in 1762 put forward a method by which this operation, otherwise full of danger, might be rendered feasible; and John Hunter, lecturing in 1785, favoured the idea of removal, considering that the opening would not necessarily constitute a highly dangerous wound. In 1798 Chambon, in a book on diseases of women, published at Paris, strongly argued in favour of the operation. Although it does not appear that he ever himself performed it, he says, "I

am convinced that a time will come when this operation will be considered practicable in more cases than I have enumerated, and that the objections against its performance will cease." John Bell also has a share of credit in this matter, for in his lectures on surgery at Edinburgh in 1794 he dwelt with much force on the practicability of removing ovarian tumours by operation. It was reserved, however, for a pupil of his, Ephraim M'Dowell, from Virginia, to perform the first modern operation of ovariotomy for disease. He settled in practice in Kentucky in 1795, and in 1809 carried into effect this novel operation upon a middle-aged woman, who survived to complete her seventy-eighth year in 1841. Thus an American had the glory of first boldly starting in the new path.

It was difficult to give the new operation a start in England. "It must be remembered," says Sir Spencer Wells, "that, at that time of day, the mortality from all operations was much greater than it is now; that the sick and diseased were more passively quiescent under their maladies and less tolerant of any surgical suggestions, just as we ourselves find to be the case among the unroused population of an outlying agricultural district; that they were not buoyed up, as modern women are, by the histories and promises of painless extirpations under chloroform or methylene; and that, without any mawkish sentimentalism, surgeons themselves had to encounter the *peine forte et dure* of their suppressed sympathy, and nerve themselves up

to the infliction of the most deliberate and tedious eviscerative vivisection. The disease was looked upon as a mystery, and its ending in death as a matter of course; and, instead of being accompanied, as we now see it, by fretful resistance and chafings to escape, it only led to stolid endurance or religious submission; and on the part of the profession, to pity and endeavours to alleviate the inevitable misery. But M'Dowell was a free man, in a new country, clear from the conventional trammels of old-world practice, found his patients in the most favourable conditions of animal life, seems to have had one of those incomprehensible runs of luck upon which a man's fate and reputation so often turn if he has the sagacity and energy to put such fortunate accidents to good account, and was happy, as those usually are who can afford or constrain themselves to wait, in finding suitable time, place, persons, and opportunity for working into fact the notions of his tutor, Bell. He lost only the last of his first five cases of ovariotomy, and thus, as it were, established at the outset what until recently was complacently regarded as a satisfactory standard of mortality for so serious an operation." *

As a surgeon M'Dowell was "cautious, calm, and firm, paying great attention to the details of his operations and treatment, and selecting and drilling his assistants with great care." In 1879 a granite obelisk was raised to his memory in the cemetery where he

* Ovarian and Uterine Tumours: 1882.

was buried, near his home, in commemoration of his courageous and important work.

Long after M'Dowell's operations became known, a case was discovered as far back as August 1701, in which Robert Houstoun, a Glasgow surgeon, operated on a woman for a large tumour in a fashion somewhat anticipatory of modern ovariotomy. She recovered, and lived sixteen years afterwards. So often are anticipations of great improvements to be found, that it appears that the merit, like the difficulty of actually making a thing practicable and practised, is as great as, or greater than, that of discovery.

Several American surgeons followed M'Dowell, but the operation did not come rapidly into vogue, partly because anæsthetics had not yet been introduced. Lizars of Edinburgh had one successful and one unsuccessful case in 1825. Dr. Granville attempted it in London in 1827, but the operation was abandoned on account of the difficulties met with: fortunately the patient recovered. In 1836 Dr. Jeaffreson of Framlingham first operated successfully by means of the short incision recommended by William Hunter; the patient recovered and bore a family afterwards. In the same year several other provincial surgeons were equally successful. In 1840 Mr. Benjamin Phillips operated unsuccessfully at the Marylebone Infirmary. In 1842 Dr. Charles Clay of Manchester commenced a long series of operations, operating four times in the year, three times successfully. The first successful case in

London was by Mr. Walne in November 1842. From this time operations were not infrequent. In September 1846 Mr. Cæsar Hawkins proved for the first time that success was possible in a London hospital; his precautions and his directions were most excellent. In June 1848 Dr. Charles Clay published a series of 32 cases with only 10 deaths, and he continued to operate for many years until he had performed 395 operations with only 101 deaths, slightly above 25 per cent. He used long ligatures. In 1850 Mr. Duffin, in London, employed an important improvement in procedure.

Sir Spencer Wells's medical education and study in all these years had not led to his paying any attention to the subject. It was evidently outside the prevailing ideas of most of the medical schools. His opinion in 1848 was certainly against the justifiability of the operation. In 1853 or 1854 he became acquainted with Mr. Baker Brown, and in the latter year assisted him at the Middlesex Hospital in his eighth case of ovariotomy. This was the first time he had seen the operation attempted, but the patient died. Several unsuccessful cases led Brown to give up his attempts entirely from March 1856 to October 1858.

When the Crimean War broke out, Sir Spencer Wells betook himself to the army in the East. There he learnt much of the freedom with which the abdomen might be injured and yet recovery take place if the constitution was good and other things were favourable. He saw frightful cases of laceration by fragments of shell re-

cover after careful cleansing and accurate closure of the wounds. He returned to London much less afraid than before of abdominal wounds. Renewing his work at the Samaritan Hospital, he at first saw very little of ovarian disease, and it was not till December 1857 that he made his first attempt to perform ovariotomy, which, however, on Baker Brown's advice, he did not carry to completion. His second attempt was completed, with Brown's assistance; but the latter did not recommence to operate himself until after an interval of more than two years and a half.

Sir Spencer Wells has given a graphic account of his early experiences.* "It would be difficult to imagine," he says, "a position more disheartening than that in which I was placed when making my first trials of ovariotomy. The first attempt, as I have said, was a complete failure, and strengthened not only in the minds of others, but in my own mind, the fear that I might be entering upon a path which would lead rather to an unenviable notoriety than to a sound professional reputation. And if I had not seen increasing numbers of poor women hopelessly suffering, almost longing for death, anxious for relief at any risk, I should probably have acquiesced in the general conviction—have been content with palliative tapping, or making some further trials of incision and drainage, or of iodine-injection, or of pressure, rather than have hazarded anything more

* Address to Midland Medical Society, Birmingham, November 5, 1884.

in the way of ovariotomy. It may be forgotten now, but it is true, that at that time everything was against the venture. The medical press had denounced the operation, both in principle and practice, in the strongest terms. At the medical societies the speakers of the highest authority had condemned it most emphatically. The example of the men who had practised it was not followed; some of them had given it up. Only once had a successful result been obtained in any of our large metropolitan hospitals, that by Cæsar Hawkins, at St. George's Hospital, in 1846, and he never undertook it a second time. Every other attempt—at Guy's Hospital by Morgan, Key, and Bransby Cooper, at St. Thomas's by Solly—had ended in death." In 1858 three cases were undertaken, and all with success, which did much to confirm Mr. Wells in his new practice. The fourth he lost, and to explain the cause he made some experiments upon animals, which led to important improvements in methods, yet during 1859 five out of eleven operations had fatal results.

The translation in 1860, by Mr. John Clay of Birmingham, of Kiwisch's "Diseases of the Ovaries," with its valuable tables showing the results of all recorded cases, was of great importance to the progress of ovariotomy. Since then vast improvements have been introduced, the mistakes of earlier operators corrected, bichloride of methylene has been used with gratifying results instead of chloroform, precautions have been taken to prevent the access of any taint of

infectious disease, every medical man present at the operation has been put under strict inquiry as to his not having recently been in a dissecting or *post mortem* room, and the utmost possible purification of house, room, bedding, clothing, and instruments has been practised. Indeed some precautions have been so stringently insisted on as to give considerable offence at times. The old vegetable material for ligatures and sutures, coarse whipcord or twine, has been given up, and after many trials of metallic wires pure silk has been settled upon as the most trustworthy. In fact it is entirely absorbed without needing to be pulled out again. The multitude of intricate details involved precludes our giving an account of the stages by which the present perfection has been reached. In 1864 Mr. Wells, in pursuance of a pledge he had given to record and publish his entire experience, favourable and unfavourable, published a full account of his first 114 cases. Since then two extended records, one in 1872 giving an account of 500 cases, and a second in 1882 with 1071 cases, have been published. The most remarkable thing in the history is the gradual diminution in mortality. In the first hundred cases the deaths were thirty-four; in the last they diminished to eleven; in the seventy-one cases following the first thousand only four died, while sixty-seven recovered This is notwithstanding the fact that Sir Spencer Wells is often called upon to treat patients rejected by other surgeons as unfavourable cases. A recent record by

Thomas Keith, an Aberdeen surgeon, in which a mortality of only three and a half per cent. has occurred, even outdoes this astonishing result. It is needless to relate how the operation has been adopted by most Continental surgeons of mark, and with excellent results.

We may note that already in 1864 Mr. Wells had treated of hospital atmosphere, organic germs as causes of excessive mortality, and commented on the researches of Polli with sulphur and the sulphites, before as yet the antiseptic treatment had come prominently forward. When Mr. Lister's system became established, Mr. Wells gladly adopted all its essentials in his operations—the spray, carbolised sponges, instruments, &c. He is convinced that by these precautions those patients who have recovered have suffered much less from fever, while convalescence has been more rapid than it used to be. In fact, the general result of the ovariotomy of the past twenty-five years is "thousands of perishing women have been rescued from death; many more thousands of years of human life, health, enjoyment, and usefulness have been given to the race, and to all future victims of a malady before inevitable in its fatality, consolation, hope, and almost certainty of cure."

The good influence of this success has, Sir James Paget says, extended to every department of operative surgery, and will always continue to be felt. It has led to an extension of the whole domain of peritoneal

surgery, leading surgeons to attempt and persevere until successful in many operations formerly considered quite out of reach.

Sir Spencer Wells is by no means content with promoting the progress of operative surgery; he looks forward to prevention with the greatest hope, and advocates measures calculated to promote accurate research in pathology. He is a strong supporter of any possible action by the College of Surgeons in this direction. He says: "While we modern surgeons congratulate our science on its liberation from the trammels of tradition; upon its working in an atmosphere cleared of the mist of superstition; upon the changing of its mode of action from a blind grappling with the phantom entities of a disease to a study and manipulation of overnourished or degenerating tissues; upon its having laws which can be understood and rules of practice which can be followed, we ought not to overlook one fact, which perhaps is more evident to outsiders than to ourselves, standing as we do in the dust and turmoil of the arena of our work. I mean that that work, good and useful as it is, has too much the character of what is technically called 'salvaging'—is too much in correlation with what is done by the lifeboat service."

Mr. Wells had long been a member of the Council of the College of Surgeons when in 1882–3 he became its President. In 1882 he was created a baronet. He has by no means limited himself to questions of operative

surgery. His public efforts have been frequently directed towards important subjects of state and municipal polity, sanitary matters, the abatement of the smoke nuisance, the securing of the health of passengers on board ship, the hygienic condition of hospitals, and perhaps most important of all, the mode of disposal of the dead. His views on the evils of the present system are well set forth in a letter he addressed to the *Times* on March 3, 1885, from which we make the following extract:—

"In this metropolitan district in the twenty-five years 1859–1883, the deaths registered number 1,896,314. Of course, the dead have been buried, and with scarcely an exception, in and around London. Grant that in ten years a body may become harmless—although I do not at all believe that it does so within twenty years in our soil and climate—can any imagination conceive the enormous mass of decaying animal matter by which we are surrounded? Could any one be surprised at the outbreak of some devastating pestilence a hundredfold more destructive than the plague or black death of the Middle Ages? And ought not every sanitary reformer to aid the revival of the ancient practice which would convert the existing cemeteries, so rapidly becoming sources of danger to the public health, into permanently beautiful gardens, receptacles for vases and cinerary urns, which would encourage sculpture, mural decoration, and coloured glass-work; while in our country churches the ashes of the people might again repose in death near the scene of their work in life perfectly

harmless, instead of polluting the earth of the churchyard and the water drunk by the surviving people, or being carried far from their homes and places of worship to some distant cemetery, which before long must become overcrowded and pestilential. Public sentiment may for a time revolt at an innovation, but a very little reflection will bring most people to agree with part of the Bishop of Manchester's address on consecrating a new cemetery. He said:—

"'Here is another hundred acres of land withdrawn from the food-producing area of the country for ever. . . . In the same sense in which the "Sabbath was made for man, and not man for the Sabbath," I hold that the earth was made, not for the dead, but for the living. No intelligent faith can suppose that any Christian doctrine is affected by the manner in which, or the time in which, this mortal body of ours crumbles into dust.'"

Sir Spencer Wells in his frequent communications on the subject lays much stress on the fact that such undoubted proofs of natural death are required by the Cremation Society before cremating a body that no murderer or poisoner would think of getting the forms filled up. At the Milan Crematorium a death from poison was actually discovered in this way, when natural death only was believed to have taken place.

## CHAPTER XVII.

### *SIR WILLIAM JENNER, BUDD, MURCHISON, AND TYPHOID FEVER.*

IN no department of medical knowledge has recent progress been more marked than in the discrimination and the tracing of the natural history of the diseases known as zymotic: and no man takes higher rank in this department of investigation than Sir WILLIAM JENNER. He was born at Chatham, January 30, 1815, being the son of Mr. John Jenner, and educated at University College, London. After qualifying as a general practitioner, he commenced practice and obtained the appointment of Surgeon-Accoucheur to the Royal Maternity Charity. Before long he graduated M.D. at London University (1844), and retired from general practice. His studies in pathology became more and more extensive, and his merits were so far recognised that in 1849 he was elected Professor of Pathological Anatomy to University College, and Assistant-Physician to University College Hospital.

For some years Dr. Jenner had been assiduously studying in the London Fever Hospital, seeking to make a straight path through the many knotty ques-

tions then in debate. In April 1849 he commenced the publication, in the *Monthly Journal of Medical Science*, of his classic paper on "Typhoid and Typhus Fevers, an attempt to determine the question of their identity or non-identity, by an analysis of the symptoms, and of the appearances found after death in sixty-six fatal cases of continued fever, observed at the London Fever Hospital from January 1847 to February 1849." In this he states that "with few exceptions, British physicians have laboured to prove that typhoid and typhus fevers are identical. The results obtained by this analysis justify the assertion that they are essentially distinct diseases. . . . For two years, in distinguishing the two diseases by the eruption alone not a single error has been made, so far as could be proved by examination after death of the fatal cases, or by the progress of the non-fatal cases after their diagnosis was recorded."

The history of previous investigations and the fluctuations of opinion are excellently given by Dr. Murchison in his great work on the "Continued Fevers of Great Britain," 1862, 2d ed. 1873. Dr. H. C. Lombard of Geneva appears to have been the first to state positively (in 1836) that "there were two distinct and separate fevers in Great Britain; one of them identical with the contagious typhus, the other a sporadic disease, identical with the typhoid fever of the French." He failed, however, to point out the distinctive eruptions and other characteristics of the two

fevers. At the same period Drs. Gerhard and Pennock in Philadelphia arrived at more definite conclusions, and distinguished the typhus of Philadelphia as being the same as British typhus, the old gaol, camp, and ship fever, so direfully contagious and fatal; while certain intestinal phenomena were invariably found in the other or typhoid fever, which was rarely contagious. The characteristic eruptions and many of the symptoms were also accurately discriminated. These observers were followed by others who with more or less success and emphasis insisted on the same views. Among these were Drs. H. C. Barlow and A. P. Stewart, both of whom read important papers on the subject before the Parisian Medical Society in 1840. In 1841 the celebrated Louis in the second edition of his great work on typhoid fever accepted the view that the English typhus was very distinct from the fever which he had so largely elucidated. Nevertheless many physicians of authority strongly maintained their identity, and the majority of the medical schools taught this doctrine, which could not fail to retard progress. It is obvious how much uncertain and injurious treatment must have existed for a long period owing to the confusion of these two diseases.

In his series of papers published in 1849 and 1850 Dr. Jenner confirmed and extended the distinctions between the symptoms of the two fevers, comparing the selected cases most minutely as regarded previous health, complexion, sex, age, mode of attack, duration,

eruption, expression during disease, manner, hue of face, presence of headache, delirium, loss of muscular power, sensation, appearance of the tongue, suffering of pain, appetite, thirst, pulse, cough, and lung symptoms, and many other particulars, and detailed most carefully the *post mortem* appearances of the diseased action in every organ.

As regards the age of patients, he showed by calculation that typhoid usually attacked much younger patients than typhus, the average age of his cases of the one being 22 years, of the other 42 years. In typhus, death took place on the average on the fourteenth day, while in typhoid the average was the thirty-second day of residence in the hospital. The rose rash of typhoid, disappearing completely on pressure, resuming the original appearance on the withdrawal of pressure, was clearly discriminated from the mulberry rash of typhus. His *post mortem* observations may be considered to have given the death-blow to the idea that typhoid was merely typhus fever with abdominal complications. In closing the series of papers (April 1850) Dr. Jenner remarked, as to the suggestion that he had drawn general conclusions from a too limited number of facts, "A few facts, impartially observed, minutely recorded, and carefully analysed, are, I believe, more likely to give correct results than a multitude of general observations; and moreover, I believe most men would be astonished if they had in numbers all the cases of any given disease they had

ever seen, yet concerning which they have generalised. The method I have adopted—however prolix it may be, however difficult to conform to, however tedious the details into which it leads—has this advantage, that if the observer be honest, and capable of noting what is before him, thinking men may judge of the value of his facts, the force of his reasoning, and the correctness of his conclusion; whereas general observations, while they are totally incapable of proving anything, are exposed to all the fallacies of definite statements, because the one, like the other, rests ultimately on the accuracy of the facts observed. If the observations on which any reasoning is founded be erroneous, no cloaking of those observations in general terms can render the conclusions correct. It has been objected to definite numerical statements that they mislead the reader by an *appearance* of accuracy in cases where there has been great inaccuracy in observation. This objection appears to me to lie against the condition of the reader's mind, and not against the method. . . . The more complicated the problem to be solved, the more careful ought we to be that *every* step in its solution is made correctly. How complex questions, such as arise in medicine, are to be determined mentally—*i.e.*, without the aid of figures—by ordinary men, I am at a loss to conceive. Yet physicians think to solve, by mental reveries, problems in comparison with which the most difficult that the most renowned calculators ever answered were child's play; and not only do they

think to solve these problems, but to carry in their minds for years the complicated materials by which they are to be solved."

Another important branch of Dr. Jenner's inquiry dealt with the question as to whether the specific cause of these diseases is distinct or the same, the latter being then the preponderant opinion. In a paper on this subject communicated to the Royal Medical and Chirurgical Society, on December 11, 1849, he showed that in 1847–8–9, on analysing all the cases in which two or more fever patients came from the same house, scarcely a single instance occurred where typhus and typhoid came at the same period from the same house. In nearly all cases the two diseases came from quite distinct localities. No transitional cases occurred between the two; the rash of typhoid did not graduate into that of typhus. It was several times observed that when a succession of cases came from the same locality, or arose apparently from the same cause, they agreed remarkably in symptoms or other features. Thus Dr. Jenner considered he had definitely proved that typhus and typhoid proceeded from perfectly distinct causes, a result which recent medical science accepts without reserve.

Although the contributions of this distinguished physician have been of such high worth, and his subsequent success so great in practice, he is far from being wedded to the view that any great step forward in medicine has been the direct result of the labours of a

single man. Long after his early papers, in addressing the British Medical Association in 1869, Sir William Jenner said: "The silent workers render most efficient aid, the results of their unspoken experience confirming or refuting the published assertions of the few." He believes that no science has advanced more during the present epoch than medicine, and that it has progressed equally as a practical art.

Dr. Jenner's appointments include, among a crowd of others, those of Physician to University College Hospital (1854), Professor of Clinical Medicine (1857) and of the Principles and Practice of Medicine (1862), Physician to the Hospital for Sick Children (1852), Assistant-Physician to the Fever Hospital (1853). In 1864 he was elected Fellow of the Royal Society, and became President of the College of Physicians in 1881. In 1861 he was appointed Physician-Extraordinary to the Queen, and attended the Prince-Consort in his last illness. In 1862 he became Physician-in-Ordinary to the Queen, and has frequently attended her Majesty. He was made a baronet in 1868, and further advanced to the dignity of a K.C.B. in 1872 for his services during the Prince of Wales's illness from typhoid fever.

Sir William Jenner has published eminently valuable clinical systematic lectures in the medical journals, and a small treatise on Diphtheria (1861). His addresses to the British Medical Association (1869), and to the Epidemiological Society (1866),

published together, are most excellent as summaries of the modern progress of medicine, and as pointing out the directions in which future advances may be made. He insists most strongly on and desires most ardently the prevention of disease, and shows a striking readiness to welcome new discoveries.

Few more striking individualities have been seen among the provincial physicians of our day than that of WILLIAM BUDD, of Clifton. He was one of the younger sons of Mr. Samuel Budd, a successful medical practitioner at North Tawton in Devonshire, who having very considerable culture and foresightedness, brought up most of his large family at home, and was ultimately enabled to introduce seven out of nine sons to the medical profession, sending seven to Cambridge, where five became wranglers. One of the elder brothers, George Budd, was long Professor of Medicine at King's College, London, the author of an excellent treatise on Diseases of the Liver, and a most successful London physician. William Budd was born in September 1811; his medical studies were pursued in London, Edinburgh, and Paris, in the latter of which cities he spent four years. Graduating M.D. in 1838 at Edinburgh, he for some time afterwards assisted his father in his practice at North Tawton, and here in 1839 commenced his lifelong studies on typhoid fever, having himself been already a sufferer by that malady. He had peculiar advantages in this study,

for he was personally acquainted with every inhabitant of the village, and being as medical practitioner in almost exclusive possession of the field, nearly every one who fell ill, not only in the village itself, but over a large area around it, came immediately under his care. At the date of the outbreak the population of eleven or twelve hundred had been extremely exempt from fevers. Yet there was no sewerage system; cesspools prevailed; pig-styes were close to the houses; and all conditions of decomposition were to be found;—but fever did not arise till it had been specifically introduced. In July 1839 the first case of typhoid occurred, and before the beginning of November over eighty of the inhabitants had suffered from it. Young Budd kept an accurate and detailed record of every essential fact, and spared no pains in tracing out all extraneous facts that he required to know. He was extremely struck by the fact that three persons left North Tawton after they had been infected, and all three communicated the disease to one or more of the persons by whom they were surrounded. The narrative which Dr. Budd gave many years afterwards, in his "Typhoid Fever: its Nature, Mode of Spreading, and Prevention" (1873), is like a romance for its interesting detail, though melancholy with its tale of pain and death. He shows that there is evidently a specific poison which breeds and multiplies in the living human body, and that this process of breeding and multiplying constitutes the fever itself. This essentially is its contagiousness,

the communication from body to body of the specific matter or germ, which when bred and multiplied produces the fever. This he called the master-fact in its history. He further believed that all the emanations from the typhoid patient are in a certain degree infectious, but that what is cast off from the intestine is incomparably more virulent than anything else. Wherever no sufficient provision was made for preventing such material from contaminating the soil and air of the inhabited area around, notwithstanding the most spacious rooms, the freest ventilation, and careful nursing, he found there was no real security against the spread of the fever. The fact alleged against Dr. Budd's views, that typhoid is seldom taken by attendants on the sick, does not at all militate against his teaching, for unless they received into their system through milk, water, food, or air, some of the specific poison of typhoid, they would certainly not suffer.

In 1842 Dr. Budd settled in Clifton, and was in 1847 elected Physician to the Bristol Royal Infirmary. He lectured for a number of years in the Bristol Medical School, and worked incessantly at maturing and propagating his views on the nature and mode of propagation of zymotic disease. He was no mere theorist, but in all his pursuits had most practical objects in view, seeking to enforce on his medical brethren, public authorities as well as private persons, the urgent necessity of the most careful, well-advised, and continuous methods of disinfection. He was in effect a

great sanitarian and champion of preventive medicine. Pure water was one of his great panaceas. The Bristol Waterworks were among his cherished objects of promotion and watchfulness. His remarkable clearness of vision and strength of conviction made him somewhat impatient of the strenuous opposition with which his views were met. For a long period he was almost alone in his uphill fight. He did not fully put his views before the profession till 1857–60, when he published a series of papers in the *Lancet*, afterwards embodied in his work on typhoid fever; but he had long before taught them in the Bristol Medical School, and practically acted upon them himself. During the depressing period of opposition which he encountered, almost the only sympathy he could count on was that of the late Sir Thomas Watson, who encouraged him greatly, believing his investigations to be of priceless value. Cheered in this way, Budd continued to promulgate his views, dogmatically it is true, but in a manner singularly attractive, for he had a natural kindliness of disposition and freedom from all jealousy. His impressive eloquence was not more striking than his logical power, which is evident in all his works.

Asiatic cholera, when it broke out in Bristol in 1866, found William Budd and Bristol prepared. The deaths from this destroyer in 1849 had been 1979, in 1866 they were but 29, notwithstanding that the disease broke out very severely, and occurred in twenty-six different localities. Budd's preventive measures, and his strin-

gent plans of disinfection, proved victorious. He made the contagious diseases of animals subjects of special study; and his conclusion was that several of them could only be adequately dealt with by immediately slaughtering the infected animals. This view he took in regard to the terrible rinderpest of 1866: and his advice of "a poleaxe and a pit of quicklime," though at first ridiculed, had to be followed, after great loss had taken place through not following it earlier.

Dr. Budd was elected a Fellow of the Royal Society in 1870. Besides his famous work on typhoid fever, and many scattered contributions to medical journals and societies, Dr. Budd was the author of the following works, many of which are of very great value:—"Malignant Cholera: its Mode of Propagation and its Prevention" (1849); "Scarlet Fever and its Prevention" (1869); "The Siberian Cattle Plague, or the Typhoid Fever of the Ox" (1865); "On Diseases which affect Corresponding Parts of the Body in a Symmetrical Manner" (1842); "Researches on Gout" (1855); "Cholera and Disinfection, or Asiatic Cholera in Bristol in 1866" (1871); "Variola Ovina—Sheep's Smallpox—or the Laws of Contagious Epidemics Illustrated by an Experimental Type" (1863). He was an accomplished draughtsman and an excellent photographer, and made great use of these arts in his researches. He was well skilled in French, German, and Italian, and kept himself well up in Continental as well as English medical literature. He worked with untiring energy and in-

dustry, having a large practice extending far beyond Bristol: but the attempt to combine this with so much original research proved too much for his constitution. He had been originally strong, but was weakened by two attacks of fever, and finally in 1873 his health broke down, and this led to his finally retiring from practice and settling at Clevedon, where he died January 9, 1880. Just previously to his retirement he had committed to his friend Dr. Paget of Cambridge a brief summary of the results of many years' study of pulmonary consumption, as to its communicability from person to person by organic germs. This was published in the *Lancet* at the time, but unfortunately the fuller researches therein referred to have never been given to the public. But in connection with typhoid and other zymotic fevers he has left on the subject the indelible impression of his great genius.

The exertions of CHARLES MURCHISON, who died before Budd, though much younger, were largely devoted to controverting Budd's views on the germ theory of zymotic diseases. He belonged to the same Aberdeenshire family from which Sir Roderick Murchison the geologist sprang, and was born in Jamaica in 1830. His father, himself a physician, spent his latter days in Elgin, where his son Charles was at first educated. As early as 1845 he entered Aberdeen University, but in 1847–8 he commenced medical study at Edinburgh, and in successive years gained numerous

distinctions and considerable note as a diligent and successful student. In 1850 he was Syme's house-surgeon. In August 1857, when he graduated, he received the gold medal for his thesis on the Pathology of Morbid Growths. He further studied at the Rotunda, Dublin, and in Paris, whence he went to India, being appointed Professor of Chemistry to the Medical College, Calcutta. In this office he was both successful as an experimenter and as an expositor. Later, he went with the army on the British Expedition against Burmah, and utilised the opportunity to make valuable observations on the climate and diseases of Burmah, which he afterwards published.

Returning to England in 1855, Murchison became a member of the London College of Physicians, Physician to the Westminster General Dispensary, and Demonstrator of Anatomy at St. Mary's Hospital. In 1856 he was appointed Assistant-Physician to King's College Hospital, which office he resigned in 1860, and joined the staff of the Middlesex Hospital. He further held from 1856 the post of Assistant-Physician to the London Fever Hospital, steadily pursuing there as elsewhere his investigations into the nature and causes of zymotic diseases, from which he himself twice suffered in the form of typhus fever, which left in him heart-mischief that ultimately caused his death.

In 1862 appeared Murchison's work on "The Continued Fevers of Great Britain," dealing especially with typhus, typhoid, and relapsing fevers. In this he

treats exhaustively the history, geographical range, causation, symptoms, treatment, and many other questions connected with fevers, and endeavours especially to reduce his observations to a numerical expression. His strong conviction was that these diseases are preventable, and that they originate in certain unhealthy and impure conditions capable of generating specific poisons in each case. But as he commenced his work at the London Fever Hospital believing that typhus and typhoid fever were mere varieties of one disease, in spite of Stewart's and Jenner's publications, so he maintained to the last that Budd's view as to the germ origin of typhoid fever was erroneous, and that even if typhoid were communicable by germs, it could arise anew when favouring conditions of decomposition occurred. He regarded it as proved that typhoid fever is constantly appearing where decomposing sewage is present, but where every effort fails to detect contamination from a previous typhoid patient.

Murchison's work was at once recognised as a standard one. The first edition was rapidly sold, and it was translated into German. The publication of a second edition was, however, delayed till 1873, owing to Murchison's strong desire to make his book as complete statistically as possible. The first edition was based on 6703 cases of continued fever admitted into the London Fever Hospital in the years 1848–57, but the second included the results of a far larger number, 28,863, admitted during 1848–70, thus giving the entire medi-

cal history of the fever hospital from the time that the different continued fevers were first distinguished in 1848. Energy and resolution of the most intense description are indicated by such a labour. This work had to be done in the intervals of growing practice and hospital teaching. By the time he was forty years old Murchison was one of the leading London physicians, and continued in full work till his death.

It was not only in regard to fevers that Murchison held a conspicuous place and published works of great value. In 1868 he published an excellent series of "Clinical Lectures on Diseases of the Liver," which reached a second edition in 1877, when he added to them the Croonian Lectures on "Functional Derangements of the Liver," delivered at the College of Physicians in 1874. In 1871, when St. Thomas's new hospital was opened, Murchison was invited to join its staff as full physician and joint-lecturer on medicine. In this growing school he found full scope for his great talent as a clinical teacher. Of his success in this capacity the *Lancet* said *—"His teaching was a reflex of his singular lucidity of thought and expression, which not only attracted the student with its distinctness and brilliancy, but furnished him with a method on which to found his own facts and observations." His inaugural address as President of the Pathological Society in 1877 gave further proof of his marked originality of thought.

Murchison's accomplishments and personal attrac-

* Obituary notice, May 3, 1879, p. 645.

tiveness were as remarkable as his professional talents and industry. In botany, zoology, chemistry, and geology he had very wide knowledge, and he edited the palæontological memoirs of his friend Hugh Falconer, the explorer of the Miocene fauna of the Siwalik Hills. Fly-fishing was his favourite recreation. "In personal appearance," says the *Lancet*, "Dr. Murchison was slightly below middle stature, and before the commencement of his fatal illness, of sturdy robust build, with the appearance of one well fitted to bear the trials and struggles of life. His head was large, the forehead high and full, the hair black, and eyes of surprising brilliancy and power of expression. In manner he was reserved, sparing of speech, and free from that impulsiveness which hails the ordinary acquaintances of life as esteemed friends. To those who knew him intimately, however, his full character was revealed, and they found in him a depth of love, tenderness, and sympathy, together with a constancy and devotion in friendship, rarely found in more demonstrative natures." He attached himself particularly to the younger members of his profession, and never spared time or trouble in assisting them with his counsel and sympathy. He suffered severely from heart disease for several years before his death, which took place suddenly in the interval between the departure of one patient and the announcement of another, on the 23d April 1879.

## CHAPTER XVIII.

### *SIR JOSEPH LISTER AND ANTISEPTIC SURGERY.*

AGAIN and again in these pages the hereditary succession of scientific powers has been illustrated. Not the least eminent example is to be found in the case of Sir Joseph Lister, who is the son of Mr. Joseph Jackson Lister, F.R.S., of Upton House, Essex, who in the words of the Rev. J. B. Reade, F.R.S., in his presidential address to the Royal Microscopical Society in 1870, "raised the compound microscope from its primitive and almost useless condition to that of being the most important instrument ever yet bestowed by art upon the investigator of nature." Mr. J. J. Lister was born in London on January 11, 1786, his parents being members of the Society of Friends. At fourteen years of age he left school to assist his father in the wine trade: but though for many years closely occupied in business, he contrived by early rising and otherwise to supplement his plain school education, and to make himself accomplished in mathematics, as well as generally acquainted with most subjects in literature, science, and art. His predilection for optics was early

shown. As a little child with shortsighted eyes, he enjoyed looking through air bubbles in the window-pane, enabling him to see distant objects more clearly. At school he was the only boy who possessed a telescope. He soon became addicted to microscopical study; but it was not till 1824, when he was 38 years old, that he thought of improving the object-glass of the compound microscope, and made suggestions to W. Tulley, the optician, which resulted in the production of a new object-glass much less thick and clumsy, which speedily became the favourite. On January 21st, 1830, he read a paper before the Royal Society "On the Improvement of Compound Microscopes," announcing the remarkable discovery of the existence of two aplanatic foci in a double achromatic object-glass. This formed a basis for subsequent important improvements. In 1837 he gave to Andrew Ross the construction for a $\frac{1}{8}$-inch objective of three compound lenses, by which that maker's fame was largely increased, and it became the standard form for high power for many years. He also made some notable researches "On the Structure and Functions of Tubular Polypi and Ascidiæ" (Phil. Trans. 1834), and independently came to the same conclusions as Sir George Airy, the late Astronomer-Royal, on the limits of human vision as determined by the nature of light and of the eye; but his paper on this subject was never published, owing to the publication of Sir George Airy's researches. He survived in vigorous health to see his

son Joseph in secure possession of fame, dying on October 24, 1869. His son records * that "he was most unselfish, and scrupulously tender of hurting the feelings of others, and extremely generous in the pecuniary support of public philanthropic objects, as well as in secret acts of charity. Though warmly attached to the religious Society of Friends, to which he belonged, he was a man of very liberal views and catholic sympathies. But the crowning grace of this beautiful character, though it might veil his rich gifts from those not intimate with him, was a most rare modesty and Christian humility."

JOSEPH LISTER was born in 1828, and took the B.A. degree at London University in 1847. Pursuing a course of medical study at University College, London, he gained the M.B. degree in 1852, being awarded gold medals in anatomy and in botany at the first M.B. examination, and the scholarship and gold medal in surgery at the final examination. He became Fellow of the Royal College of Surgeons in 1852, and took a similar qualification at Edinburgh in 1855. He married a daughter of Mr. Syme, then Professor of Surgery in the University of Edinburgh.

Dovoting himself to physiological research on matters having a wide bearing on practical medicine and surgery, Mr. Lister attained wide repute as an original investigator at a comparatively early age, and his position in physiology was assured by a series of papers which

* *Monthly Microscopical Journal*, 1870, iii. p. 143.

would suffice to make his career memorable, if he had never applied antiseptic measures to the treatment of disease. Beginning with some observations on the contractile tissue of the iris in 1853, he went on to study the muscular tissue of the skin, the flow of the lacteal fluid, and the minute structure of involuntary muscular fibre, on all of which subjects his papers are published in the "Journal of Microscopical Science." In 1857 he commenced his series of contributions to the Royal Society, the first being on the functions of the visceral nerves, with special reference to the inhibitory system. This was further developed in "An Inquiry regarding the Parts of the Nervous System which regulate the Contractions of the Arteries" (Phil. Trans. 1858). But his two most important papers at this period are those on the Early Stages of Inflammation (1857), and on the Coagulation of the Blood, delivered as the Croonian Lecture for 1863.

For some years Mr. Lister was a lecturer on surgery in the Edinburgh Extra-Academical School. He was afterwards elected Professor of Surgery in Glasgow University, and Surgeon to the Glasgow Royal Infirmary.

While Mr. Lister held these appointments, circumstances occurred which were calculated to stimulate to the highest degree the effort to discover some method of dressing wounds which should obviate the dangers of putrefactive changes. About 1860 a new surgical hospital was erected as part of this infirmary,

and although many of the most approved principles of hospital construction had been adopted, the building proved extremely unhealthy. Pyæmia, erysipelas, and hospital gangrene soon showed themselves, affecting on the average most severely those parts of the building nearest to the ground. For several years Mr. Lister found that in his male accident ward, which was on the ground-floor, when nearly all the beds contained patients with open sores, the diseases which result from hospital atmosphere were sure to be present in an aggravated form; whereas, when a large proportion of the cases had no external wound, these evils were greatly mitigated or entirely absent. At this period the managers were very desirous of introducing additional beds into the wards, to supply accommodation for the rapidly increasing population of Glasgow; and Mr. Lister strongly and firmly resisted such increase in his wards. Some of the wards indeed at times became subject to such severe mortality that they had to be closed for various periods. One particular visitation was so serious that it was resolved to make an investigation to discover if possible the cause of the evil, which might, one would think, have been done at an earlier period. Great was the shock of every one concerned to find that a few inches below the surface of the ground behind the two lowest male accident wards, with only the basement area, four feet wide, intervening, there was the uppermost tier of a multitude of coffins, which had

been placed there at the time of the cholera epidemic of 1849. The corpses had undergone so little change in the interval that the clothes they had on at the time of their hurried burial were plainly distinguishable. The wonder was, not that these wards on the ground-floor had been unhealthy, but that they had not been absolutely pestilential. Yet at the very time when this shocking disclosure was made, Mr. Lister was able to state, in an address which he delivered to the British Medical Association at Dublin in 1867, that during the previous nine months, in which his new antiseptic plans of treatment had been in operation in his wards, not a single case of pyæmia, erysipelas, or hospital gangrene had occurred in them.

The managers of the infirmary of course did all in their power to remedy this insalubrious state of things. They poured large quantities of carbolic acid and quicklime upon the ground, considering this a less dangerous proceeding than to attempt the removal of the putrefying mass; they covered the ground with an additional thickness of earth, and adopted other measures. The hospital itself was far from being well situated in other respects. It abutted against the old Cathedral Churchyard, much used for the "pit burial" of paupers in a most deleterious state of aggregation. Yet during the two years and a quarter intervening between the Dublin address and Mr. Lister's leaving Glasgow for Edinburgh, his new anti-

septic system continued in the main as successful as before.

In the course of the year 1864 Professor Lister had been much struck with an account of the remarkable effects produced by carbolic acid upon the sewage of the town of Carlisle, the admixture of a very small proportion not only preventing all odour from the lands irrigated with the refuse material, but also destroying the entozoa which usually infest cattle fed upon such pastures. His attention having been for several years greatly directed, as we have seen above, to the subject of suppuration, especially in its relation to decomposition, he saw that such a powerful antiseptic was peculiarly adapted for experiments with a view to elucidating that subject, and thus the applicability of carbolic acid to the treatment of compound fractures occurred to him.

The antiseptic system was put into practice in the Glasgow Infirmary in March 1865, but at first applied almost exclusively in compound fractures (or those in which there is an external wound) and abscesses. From 1867 it was employed for almost all surgical cases. It arose out of Mr. Lister's study of Schwann and Pasteur's germ theory and the experiments connected with them. He repeated many of the experiments, and devised new methods calculated to test whether they were capable of explaining the phenomena of putrefaction. These sufficed to prove definitely that in putrefaction the development of such

organisms as the microscope could detect, and the concomitant putrefactive changes were occasioned by minute germs suspended in the atmosphere. Professor Tyndall's beautiful experiments, by which he demonstrated the perfect manner in which cotton wool filters the air of its suspended particles, led to the idea (suggested by Dr. Meredith of the Indian service to Mr. Lister) that cotton wool might be used with advantage as an antiseptic dressing. The cotton wool must itself be rendered pure of germs by some antiseptic agency, for by the theory the air within it must contain germs. But the main feature upon which Mr. Lister for a long time relied was the copious use of carbolic acid in such a form as to prevent the occurrence of putrefaction in the part concerned.

Mr. Lister's first paper on the subject, published in the *Lancet* for 1867, struck a chord which the editor of that journal emphasised as follows on August 24 of that year (p. 234): "If Professor Lister's conclusions with regard to the power of carbolic acid in compound fractures should be confirmed by further experiment and observation, it will be difficult to overrate the importance of what we may really call his discovery. For although he bases his surgical use of carbolic acid upon the researches of M. Pasteur, the application of these researches to the case of compound fractures, opened abscesses, and other recent wounds, is all his own." The risk of blood-poisoning after operations in themselves slight, was declared to be the one great

opprobrium of surgery. There was no limit to the operative skill of surgeons, but a miserable and serious risk of fatal after-consequences against which the surgeon had no defence. Mr. (now Sir James) Paget had in 1862 given forth an idea of which we can now more clearly see the bearing, when he said that the best results he had seen in cases of pyæmia were with patients kept night and day in a current of wind. We now see that this in fact amounted to continually passing over the patient air less charged with germs than that of the room or ward in which he was placed. Mr. Lister contemplated the destruction of these germs at the seat of the wound, and the prevention of the access of fresh germs.

An example will perhaps illustrate the matter better than a theoretical account. An experiment was performed on the 31st December 1868 on a young calf a few days old, under chloroform, namely, the tying of the carotid artery on the antiseptic system, with threads composed of animal tissue. The threads employed had all been soaked for four hours in a saturated watery solution of carbolic acid, which swelled and softened them. The hair near the wound was cut short, and a solution of carbolic acid in linseed oil rubbed well into the skin to destroy any putrefactive organisms lying amongst the roots of the hair. The sponges employed in the operation were wrung out of a watery solution of the acid, and all the instruments introduced into the wound, together with the fingers of the operator's left

hand and the copper wire used for sutures, were treated with the same lotion, some of which was poured into the wound after the introduction of the last stitch, at one of the intervals left for the escape of discharge, to provide against the chance of any fresh blood which might have oozed out during the process of stitching having passed back and taken fresh germs in with it. The external dressing was a towel saturated with the oily solution of carbolic acid, folded as broad as the length of the neck, wrapped so as to extend freely beyond the wound, and prevented by several contrivances from slipping. A sheet of gutta-percha tissue was applied outside to prevent contamination of the antiseptic towel from without. A few ounces of the oily solution were poured daily over the towel for the first week, after which the dressings were left untouched for three days and then entirely removed. The wound was found quite dry, and free from tenderness. When the animal was subsequently killed, the ligatures were seen to be converted into living tissue; and such experiments proved how valuable animal fibres might be as ligatures under the antiseptic system.

Again, a portion of cotton wool was impregnated with about one two-hundredth part of its weight of carbolic-acid vapour, and the surface of a granulating sore and surrounding skin was washed with a dilute solution of the acid. A piece of oiled silk of the size of the sore was then applied, to prevent the dressings

from sticking through becoming dry. Over this was placed a piece of folded linen rag of rather larger size, and similarly impregnated with carbolic acid vapour to the cotton wool; this being intended to absorb any discharge from the sore. Lastly, an overlapping mass of carbolised cotton wool was securely fixed over all. The result was that, although all chemical antiseptic virtue left the dressing by evaporation of the volatile carbolic acid in a day or two, yet putrefaction was practically excluded by the cotton wool for any length of time.

Subsequently another variety of protective material was adopted, namely antiseptic gauze, a loose cotton fabric, the fibres of which were impregnated with carbolic acid lodged in insoluble resin. The interstices between the fibres were kept free from these ingredients, so that the porous fabric might readily absorb discharges. By arranging this in a sufficient number of layers and covering the whole with a layer of mackintosh, the discharge was compelled to pass through the whole length of the antiseptic dressing. Thus it was almost certain that if no putrefactive mischief were left in a wound or abscess, none would enter it, however profuse might be the discharge.

If a wound was presented for treatment, inflicted by some other than the surgeon, some dust was sure to have been introduced, which probably contained putrefactive germs. The energy of these had first to be destroyed by washing the raw surface with some strong

antiseptic agent. But in operating upon a previously unbroken skin, Mr. Lister considered that he could prevent the septic particles from entering at all, by operating in an antiseptic atmosphere. This was provided by producing a shower of spray of carbolic acid of the finest character. This answered exceedingly well when the solution producing the spray consisted only of one part of carbolic acid to 100 parts of water.

Here we must limit our detailed account of the antiseptic system. Under it large abscesses are opened, the matter pressed out, and fresh matter does not form, and cures are effected in severe cases which scarcely ever used to be cured. Arteries are tied with a security before unknown. Amputations and excisions are effected with a safety and diminished mortality quite surprising. Even senile gangrene shows hopeful results which were previously quite out of question. Pyæmia, hospital gangrene, and erysipelas have been almost banished from wards where the system is properly carried out. Recently a modification has been introduced, in which there is employed, not a volatile material as in the case of carbolic acid, but a dilute solution of corrosive sublimate combined with albumen. Gauze is now prepared for Sir Joseph Lister steeped in this substance, and it may become generally adopted; but it does not appear likely to supersede carbolic acid for the purification of instruments, sponges, the skin, or as a substitute for the carbolic spray. The particular form of antiseptic is a matter of detail, on which

improvement may long continue to be made; but the development of the essential idea of preventing the access of germs which can cause putrefactive changes by one method or another, and the destruction of them as far as possible when they have obtained access, will remain connected with Sir Joseph Lister as an achievement of the highest force; indeed his name seems likely to give a new word to our language, namely Listerism, by which the essential features of his system are understood.

Professor Lister was awarded a Royal Medal by the Royal Society of London in 1880, having previously received the high distinction of the MacDougall Brisbane Prize from the Royal Society of Edinburgh in 1875, for a remarkable paper on the Germ Theory of Fermentative Changes. He was created a baronet in December 1883. The universities of Cambridge, Edinburgh, and Glasgow had conferred upon him the honorary degree of LL.D., and Oxford that of D.C.L. He has been for some years Surgeon to King's College Hospital, having succeeded Sir William Fergusson.

## CHAPTER XIX.

*SIR THOMAS WATSON, SIR DOMINIC CORRIGAN, SIR WILLIAM GULL, AND CLINICAL MEDICINE.*

THE Nestor of the medical profession, Sir Thomas Watson, died in 1882, at the great age of ninety, universally beloved and honoured. Yet he had written but one extended work, the "Lectures on the Principles and Practice of Physic," and had made no striking discovery. But to have written a book which every cultivated practitioner reads, and reads with delight and satisfaction, is an achievement given to few, many though there be who aim at it. And Sir Thomas Watson's personal character was as unique as his advice was valuable.

THOMAS WATSON was born on March 7th, 1792, at Montrath (now Dulford) House, near Cullompton, Devonshire, where his father, Joseph Watson, a Northumbrian by family, was then living. He was educated at Bury St. Edmund's Grammar School, where he was a schoolfellow with Blomfield, afterwards Bishop of London, and a great friend of Watson's. In 1811 he entered at St. John's College,

Cambridge, and became tenth wrangler and fellow of his college. At that time only two fellows of St. John's could retain their fellowships without taking orders, and one of these must study medicine. This circumstance availed to turn Watson's attention to medicine in 1819 at the age of 27, when he entered St. Bartholomew's Hospital, and came under the powerful influence of Abernethy. During the session 1820–1 he attended medical lectures at Edinburgh University, and in 1822 received his licence to practise from Cambridge. But academical pursuits were continued, and Watson took private pupils, among whom was Lord Auckland, afterwards Bishop of Bath and Wells, and served the office of proctor in 1823-4. In 1825 he took his M.D. degree, and married Miss Jones, niece of Turner, Dean of Norwich and Master of Pembroke College. Soon afterwards he established himself as a physician in Henrietta Street, Cavendish Square, London, in which street he continued to live for fifty-seven years. His wife died, to his lasting regret, five years later, leaving him with one son and daughter, to whom he was devotedly attached.

Watson was recognised from the commencement of his London career as a man of mark, and in 1827 he was elected Physician to the Middlesex Hospital. In 1828, on the opening of the University College, he was appointed Professor of Clinical Medicine, retaining his post at the Middlesex Hospital; but he transferred his services as lecturer to King's College in 1831, becoming

Professor of Forensic Medicine. Practice had come but slowly in these years. In 1851 he made his first contribution to medical literature, in the shape of "Remarks on the Dissection of Bishop, and the Phenomena attending Death by Strangulation" (*Medical Gazette*). Bishop had murdered an Italian organ-boy, and brought the body to King's College for sale: Bishop was hanged, and his body, like that of his victim, came to King's College for dissection. From this time Dr. Watson made numerous contributions to the *Medical Gazette*, largely embodied in his subsequent great work. In July 1832 he was chosen to accompany Sir Walter Scott from London to Edinburgh when he was returning from Italy to Abbotsford for the last time.

In 1836 Dr. Watson was appointed to the chair of the Principles and Practice of Medicine at King's College, and in the ensuing winter delivered the first draught of those lectures on which his fame rests. They soon became well known, and they were printed weekly in the *Medical Gazette* in 1840–2. Finally they were published in two volumes by Parker in 1844, and became acknowledged as medical classics. Mr. Parker showed a righteous liberality when their great sale had brought in a large sum, in granting the author two-thirds of the profits instead of one-half, as had been agreed, and handing him twelve hundred pounds as a first payment. Watson had already, in 1840, resigned his chair at King's College rather than leave his old

post at Middlesex Hospital, but in 1843 he was compelled by the increase of private practice to resign even this. Henceforward, especially after the retirement of Dr. Chambers in 1848, he was at the head of London practice for many years. He was not, however, appointed one of the Queen's Physicians-Extraordinary till 1859; in 1861 he was called in to attend the Prince Consort in his fatal illness, and in 1866 he was created a baronet, receiving in 1870 the further appointment of Physician-in-Ordinary to the Queen. The College of Physicians elected him President in 1862, an office he held for five years. From 1858 to 1860 he represented the College on the General Medical Council. In 1857–8 he was President of the Pathological Society, and he was in 1868 the first President of the Clinical Society. In 1859 he was elected a Fellow of the Royal Society.

Two quotations from Watson's Introductory Lecture to his course will serve to indicate some of the qualities which have given his book such popularity. Referring to the study of anatomy and physiology, he says; "Do not think that I am wandering from my proper subject when I bid you to remember how profoundly interesting, how almost awful, is the study in itself and for its own sake, revealing, as it surely does, the inimitable workmanship of a Hand that is Divine. Do not lose or disregard that grand and astonishing lesson. Do not listen to those who may tell you not to look for the evidence of purpose in this field of

study, that the visible mechanism of that intricate but marvellously perfect and harmonious work, the animal body—the numberless examples of means suited to ends, of fitness for a use, of even prospective arrangements to meet future needs, of direct provisions for happiness and enjoyment—that all these have no force at all, in true philosophy, as evidences of design. For my own part, I declare that I can no more avoid perceiving, with my mental vision, the evidential marks of purpose in the structure of the body, than I can help seeing with my open eyes, in broad daylight, the objects that stand before my face."

Again, he characterises the profession of medicine in noble terms. "The profession of medicine having for its end the common good of mankind, knows nothing of national enmities, of political strife, of sectarian divisions. Disease and pain the sole conditions of its ministry, it is disquieted by no misgivings about the justice or the honesty of its client's cause; but dispenses its peculiar benefits, without stint or scruple, to men of every country or party, and rank and religion, and to men of no religion at all. And like the quality of mercy, of which it is the favourite handmaid, it "blesses him that gives and him that takes," reading continually to our own hearts and understandings the most impressive lessons, the most solemn warnings. It is ours to know in how many instances, forming indeed a vast majority of the whole, bodily suffering and sickness are the natural fruits of evil courses—of

the sins of our fathers, of our own unbridled passions, of the malevolent spirit of others. We see, too, the uses of these judgments, which are mercifully designed to recall men from the strong allurements of sense, and the slumber of temporal prosperity, teaching that it is good for us to be sometimes afflicted. Familiar with death in its manifold shapes, witnessing from day to day its sudden stroke, its slow but open siege, its secret and insidious approaches, we are not permitted to be unmindful that our own stay also is brief and uncertain, our opportunities fleeting, and our time, even when longest, very short, if measured by our moral wants and intellectual cravings."

These lectures had the largest sale of any similar work in the author's lifetime. Five large editions were published under his own revision. He most unsparingly altered his previous views with the advance of science, and showed rare modesty in his expressions thereupon. Dr. Charles West has admirably sketched his friend's character (*Medical Times and Gazette*, Dec. 16, 1882): "He laid no claim to genius; he made no great discovery. Though a scholar he was not more learned, though a good speaker he was not more eloquent, than many of his contemporaries whose names are now well-nigh forgotten; and yet he was by universal consent regarded as the completest illustration of the highest type of the physician. His moral as well as his intellectual qualities had much to do with the estimate which all formed of his character. His faculties were

remarkably well balanced, his mind was eminently fair. He had that gift—the attribute and the reward of truth—the power intuitively to detect all specious error. Hence, while the added experience of each year gave increased value to his teachings and his writings, it brought but little for him to unlearn or to unsay. He took a wide view of every question. . . . He availed himself of knowledge from all sources, and for all purposes except vain display; he used theories to illustrate his facts and to point their meaning, but no further, conscious that, with imperfect knowledge, it would be idle to attempt to build up correct theory. . . . Take him in his teaching, all in all, he seems to me, more than any one I ever knew, to be the undoubted heir of England's greatest practical physician, Thomas Sydenham."

Another writer in the *British Medical Journal*, Dec. 23, 1882, speaks of his serene and gentle temper, his modest dignity, his benevolent kindness, his unfailing clearness of judgment. "Nothing that happened in the professional world, of human or scientific importance, was alien to him; and there are few men among his contemporaries who have not at one time or another come to him for advice and guidance. Conciliatory to the utmost bounds of kindness, he was never open to the charge of favouring compromise. . . . It is rare indeed to find any man of whom it may be said as of him, that there is not one man in the profession who would at any time have declined to accept Sir Thomas

Watson's judgment on any personal or professional question as final. His sense of justice, his habitual reference of all questions of detail to unassailable principle, his flexibility of mind, and his quick perception of character, gave him a rare but well-justified ascendancy over even the ablest of his contemporaries." After a long old age spent in retirement from practice, but in continued vigorous professional study, of which he gave evidence in a little book on the Abolition of Zymotic Diseases, published as late as 1879, the venerable man died of old age at his son's residence at Reigate, in Surrey, on December 11, 1882.

Born about ten years after the last-mentioned eminent physician, DOMINIC JOHN CORRIGAN for many years held a position in Dublin somewhat parallel to that of Watson in London. He was a native of Dublin, born on December 1st, 1802, his father having been a merchant in Thomas Street. Educated first at the lay college of St. Patrick's at Maynooth, he entered upon medical study as the pupil of Dr. O'Kelly of Maynooth, who had foresight to discern that his pupil was capable of rising to the highest position in the profession, and advised his being sent to the Edinburgh Medical School. Part of his medical study was, however, pursued in Dublin, where he attended clinical lectures at Sir Patrick Dun's Hospital. His Edinburgh degree dates from 1825.

The rising science of pathology had deeply impressed

young Corrigan's mind, and he devoted himself, after settling in Dublin as physician to the Meath Street Dispensary, to original study. One of the principal fruits of his inquiries was his classic paper on "Permanent Patency of the Mouth of the Aorta, or Inadequacy of the Aortic Valves," published in the *Edinburgh Medical and Surgical Journal*, April 1832. This paper commenced with the following statement, "The disease to which the above name is given has not, so far as I am aware, been described in any of the works on diseases of the heart. The object of the present paper is to supply that deficiency. The disease is not uncommon. It supplies a considerable proportion of cases of deranged action of the heart, and it deserves attention from its peculiar signs, its progress, and its treatment. The pathological essence of the disease consists in inefficiency of the valvular apparatus at the mouth of the aorta, in consequence of which the blood sent into the mouth regurgitates into the ventricle. This regurgitation, and the signs by which it is denoted, are not necessarily connected with one particular change of structure in the valvular apparatus." One particular feature attending these cases, which Corrigan was the first fully to describe, was the extraordinary character of the pulse, since known very generally as "Corrigan's pulse." The strong visible pulsation in the arteries of the head, neck, and arms, bounding into a new position with each beat of the heart, and becoming prominent under the skin, has since proved the means whereby

aortic valvular disease of the heart has been recognised in multitudes of cases. The full pulse, followed by almost complete collapse, has since been termed "jerking, splashing, or collapsing," or the "water-hammer pulse." The peculiar rushing thrill felt by the finger in the large superior arteries was also dwelt upon, as well as the "bruit de souffle" heard as an accompaniment of the heart-sounds. Corrigan had corrected Laennec's erroneous view of the cause of this bruit, in a previous paper in the *Lancet* of vol. ii., 1829, p. 1.

Dr. Corrigan continued for some years zealously to investigate the functions of the heart, and he experimented largely upon the hearts of fishes and reptiles. He published an important paper "On the Motions and Sounds of the Heart," in the *Dublin Medical Transactions*, 1830, part i. At this period of his career, when practice as yet was but scanty, he was much encouraged by reading "The Lives of British Physicians, from Linacre to Gooch," published in 1830, and he referred to it afterwards as showing that "there is but one road to excellence and success in our profession, and that is by steady study and hard labour; and you will at least always have this consolation in your dreariest hour of labour, that no proud man's contumely, no insolence of office, nor 'spurns that patient merit of the unworthy takes,' can bar your way."

Resigning his post at the Meath Street Dispensary, Corrigan became successively attached to the Cork

Street Fever Hospital, and to the Jervis Street Hospital. Yet the Irish College of Physicians failed to discern his great merits, and blackballed him when he was first proposed for the fellowship, a mistake which they subsequently atoned for in some measure by electing him their president for five successive years, and by commissioning a statue of him, by Foley, at the conclusion of his term of office. In 1833 he began to lecture on the practice of medicine in the Carmichael School of Medicine, and practice grew rapidly. In 1840 he was appointed physician to the House of Industry Hospitals, which post he held till 1866. Here he delivered a noteworthy course of lectures on the Nature and Treatment of Fever, which were published in 1853. He accepted and enforced the modern views as to the distinctness of typhoid from typhus fever.

In 1841 Dr. Corrigan became a member of the Senate of the new Queen's University, of which after thirty years he was appointed Vice-Chancellor. In 1849 Dublin University gave him the honorary M.D. He was assiduously devoted to the onerous duties of a Commissionership of National Education. As to practice, he became the most popular and highly remunerated physician Dublin had ever seen, having for many years more calls upon him than he could possibly attend to, and receiving in several years as much as £9000 per annum in fees. In 1866 he was made a baronet in consideration both of his medical position

and of his important services to national education. He was also Physician-in-Ordinary to the Queen in Ireland.

As member of the General Medical Council from 1858 till his death, Sir Dominic Corrigan exercised a strong influence in favour of elevating the standard of professional education. He was an eloquent and lively debater and not at all averse to a display of verbal pugnacity, but he was much and generally beloved. In 1868 Sir Dominic was induced to come forward as an advanced Liberal candidate for the representation of the city of Dublin in Parliament; but on that occasion, however, he was defeated. In 1870 he was elected by a majority of over a thousand votes, and sat in Parliament till 1874. Originally of a fine constitution, he suffered severely from gout in his later years, and died after an attack of paralysis on Feb. 1, 1880.

The succession of clinical physicians is well sustained at the present day in the person of Sir WILLIAM WITHEY GULL, Baronet. Born on the last day of December 1816, at Thorpe-le-soken, Essex, William Gull was educated privately, and early became a student of Guy's Hospital, London. To this establishment he was so attached that for fifteen years he resided within its walls or immediately adjacent. In 1841 he became M.B. of London University, and in 1846 M.D. He was elected Fellow of the College of Physicians in 1846, and Fullerian Professor of Physio-

logy at the Royal Institution in 1847, which office he held till 1849.

Very early after his graduation as M.B., Dr. Gull was appointed to assist the pupils at Guy's in their studies, or in other words, he became medical tutor. In 1843 he began to lecture on natural philosophy. In 1846 he undertook the important lectureships of physiology and comparative anatomy in Guy's Medical School. Meanwhile about 1843 Dr. Gull had been appointed resident superintendent of the asylum for twenty female lunatics which Guy had ordered to be maintained. He formed a close acquaintance with Dr. Conolly, whose name will ever be connected with the rational treatment of the insane in this country, and by adopting improved methods Dr. Gull was finally so successful that the patients were all discharged cured, and the wards occupied by them devoted to the treatment of acute cases more properly coming under care in a general hospital. Meanwhile Dr. Gull was appointed assistant-physician to Guy's, and in due course succeeded to the full physiciancy. In this capacity his clinical teaching was long one of the important features at Guy's. In 1856 he became joint lecturer on medicine, which office he held till 1867 with great distinction. At this date he was compelled by the increasing claims of practice to resign his appointment; but he is still attached to Guy's as consulting physician.

Practice, indeed, came upon Dr. Gull all too soon for

medical science to reap the highest advantage from his original research. But whatever he has written has been of high value and worthy of deep consideration. Among his writings may be mentioned the Gulstonian Lectures on Paralysis (*Medical Gazette*, 1849), essays on Hypochondriasis and Abscess of the Brain, in Reynolds' "System of Medicine," and Guy's Hospital Reports, 1857; on Paraplegia, in Guy's Hospital Reports for 1856, 1858, and 1861; on Anorexia Nervosa, and on a Cretinoid State, in the *Transactions of the Clinical Society*, vol. vii. His Report on Cholera, with Dr. Baly, for the College of Physicians (1854), and his paper, with Dr. Sutton, on Arterio-Capillary Fibrosis (*Med. Chir. Transactions*, vol. lv.), rank high as original contributions, which must always be consulted by writers on those subjects.

In an oration delivered before the Hunterian Society in 1861 Dr. Gull took occasion to utter a protest against the popular prejudice for specialists. "Who can treat as a speciality," he asks, "the derangements and diseases of the stomach, whilst its relations and sympathies are so universal? How can there be a special 'brain doctor,' whilst the functions of the brain are so dependent upon parts the most distant, and influences the most various? A tumour in the brain may tell of its presence only through disturbance in the stomach, and a disorder of the stomach and its appendages may have for its most prominent symptoms only various disturbances of the brain."

In his address on "Clinical Observation in Relation to Medicine," before the British Medical Association in 1868, Dr. Gull thus expressed his impartial attitude in medicine: "We have no system to satisfy; no dogmatic opinions to enforce. We have no ignorance to cloak, for we confess it." "Medicine is a specialism; but of no narrow kind. We have to dissect nature; which, for practice, is better than to abstract it." "To clinical medicine the body becomes a pathological museum. In every part we recognise certain proclivities to morbid action; and the purpose of our study is to trace these tendencies to their source on the one hand, and to their effects on the other." "The effects of disease may be for a third or fourth generation, but the laws of health are for a thousand." "Happily, at this day, hygiene has gained strength enough to maintain an independent position in science. To know and counteract the causes of disease before they become effective is evidently the triumph of our art; but it will be long before mankind will be wise enough to accept the aid we could give them in this direction. Ignorance of the laws of health, and intemperance of all kinds, are too powerful for us. Still we shall continue to wage an undying crusade; and truly we may congratulate ourselves that no crusade ever called forth more able and devoted warriors than are thus engaged."

In 1870 Dr. Gull delivered the Harveian Oration before the Royal College of Physicians, and expressed

himself forcibly as to the duty of preventing disease. Indeed, it is a strong article of faith with him that at some future time the office of the physician will be gone. "I cannot doubt it is on all sides imperative on us to limit, and if possible to blot out, all diseases of whatever kind. Who would assume the responsibility of letting a preventable evil fester in society, on a pretence of a knowledge of the divine purposes, or under the pretext that public morality would be thereby promoted? The duty which lies nearest to us must ever have the first claim; and it cannot but be admitted that the nearest duty each man has to his fellow is to save him as far as possible from all injury, even though that injury may arise as the consequence of his own fault. Nor will it be questioned that the cause of morality is more advanced by beneficent interference than by permitting ourselves to stand passively by whilst intemperance and vice work ruin and infect the very fountains of life."

Meanwhile Dr. Gull had attained many of the highest honours of the profession. He was one of the first graduates of London University to attain a seat on its Senate, which he continues to occupy. He was Censor of the College of Physicians in 1859–61 and in 1872–3, and Councillor in 1863–4. Oxford conferred on him the degree of D.C.L. in 1868, the Royal Society elected him to its Fellowship in 1869, Cambridge followed suit with the LL.D. in 1880, and Edinburgh in 1884. He was appointed a Crown Member of the

General Medical Council in 1871, holding office till 1883, when he resigned. His successful attendance on the Prince of Wales in 1871, in conjunction with Sir W. Jenner, became the occasion of his receiving a baronetcy in 1872, and being made Physician-Extraordinary to the Queen.

The evidence given by Sir William Gull before the Lords' committee on intemperance, in 1877, has often been referred to as one of the most valuable aids to temperance that a medical man has rendered. He distinctly assigned a subordinate value to alcohol as a medicine, and expressed his belief that its value lay chiefly in its action on the nervous system as a sedative, not as a stimulant. He further stated that a very large number of people in society are dying, day by day, poisoned by alcohol, but not supposed to be poisoned by it. In the case of inebriates, with most patients he would not be afraid to stop the use of alcohol altogether. He sees no good in leaving off drink by degrees. "If you are taking poison into the blood, I do not see the advantage of diminishing the degrees of it from day to day. . . . I should say, from my experience, that alcohol is the most destructive agent that we are aware of in this country."

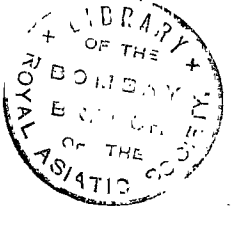
His own example is powerfully instructive. "If I am fatigued with overwork, personally, my food is very simple. I eat the raisins instead of drinking the wine. . . . I should join issue at once with those people who believe that intellectual work cannot be so well

done without wine or alcohol. I should deny that proposition and hold the very opposite." In the life of James Hinton, by Ellice Hopkins, to which Sir William Gull has contributed a preface, we learn another secret of a popular physician's endurance in the record of early constitutionals in the parks and remote suburbs, from six to eight in the morning.

In 1882, in the controversy on Vivisection, Sir William Gull, writing in the *Nineteenth Century*, showed that his sympathy with the struggles of physiologists for their science was combined with a fully answering appreciation of the value of physiological research to medicine. "Yearly in this country," he says, "more than twenty thousand persons, children and others —mostly children—die of scarlet fever; and nearly twenty thousand more of typhoid fever; and one of the chief causes of this mortality is the high temperature of the blood, which results from the disturbance due to the fever process. No wonder therefore that physiologists and physicians have anxiously and laboriously occupied themselves in investigating that mechanism of the living body which in health maintains so constant a temperature under varying circumstances, both internal and external, and which becomes so easily and fatally deranged in disease. . . . The febrile state must have arrested attention from the infancy of man. The mothers of a palæolithic age must have watched their children consumed to death in it, as do the mothers of to-day. The name of this

fiery state is as old as literature. . . . This fiery furnace, with its uncounted millions of victims, science hopes to close."

"There is no doubt that physiological experiments are useful, useful for animals as well as for man. They are therefore justifiable. . . . Nothing is so cruel as ignorance. For how many centuries had human sufferers to bear pain which is now preventable by better knowledge? How many thousands festered to death in smallpox before the discovery of vaccination? How many are now dying of tubercle and scrofula whom a better knowledge of their conditions might rescue? Yet the pursuit of this knowledge is hindered in England by the outcry of cruelty—the cruelty being no more than the inoculation of some of the lower animals with tubercular and scrofulous matter, in order to study the course of the disease and the modes of prevention. The cruelty obviously lies, not in performing these experiments, but in the hindering of progressive knowledge."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## CHAPTER XX.

### *SIR JAMES PAGET AND SURGICAL PATHOLOGY.*

THE foremost surgical philosopher and orator of his day, Sir JAMES PAGET was called to occupy the presidential chair of the International Medical Congress which met in London in August 1881. This was the culmination of a long career of scientific usefulness and successful practice. Sir James is a younger brother of Dr. G. E. Paget, Regius Professor of Medicine in the University of Cambridge, and was born at Yarmouth in Norfolk in 1814. After a course of professional study at St. Bartholomew's Hospital, London, Mr. Paget qualified as a member of the London College of Surgeons in 1836. His energy and acuteness were soon made manifest to the authorities, and he was selected to catalogue and describe the Pathological Museums of St. Bartholomew and also of the College of Surgeons, in conjunction with Mr. Stanley. These important works contributed not a little to establish Mr. Paget's scientific reputation.

In July 1842 Mr. Paget, while Demonstrator of Morbid Anatomy at St. Bartholomew's, published in

the *British and Foreign Medical Review* an exhaustive report on the chief results obtained by the use of the microscope in the study of human anatomy and physiology; it was afterwards issued separately. Being derived from the original authorities, and full references being given, it was of great value at a critical period in the growth of the knowledge of minute anatomy. For some years Mr. Paget drew up valuable reports on the progress of human anatomy and physiology.

Forty years ago Mr. Paget was already Warden of St. Bartholomew's College and Lecturer on Physiology in the Hospital. At the opening of the session of 1846 he addressed the students in an eloquent and practical way on "The Motives to Industry in the Study of Medicine." His appeals to the highest motives were most forceful, and very indicative of the spirit which was to animate himself throughout life. "Do not imagine," he said, "that your responsibilities will be limited to the events of life or death. As you visit the wards of this hospital, mark some of the hardly less portentous questions which, before a few years are past, you may be permitted to determine. In one, you will find it a doubt whether the remainder of the patient's life is to be spent in misery, or in ease and comfort; in another, whether he and those who depend upon his labours are to live in hopeless destitution, or in comparative abundance. One who used to help his fellow-men finds ground to fear that he

may be a heavy burthen on their charity. Another counts the days of sickness, not more by pain and weariness, than by the sufferings and confusion of those who are left at home without a guide, and, it may be, starving. Oh, gentlemen! I can imagine no boldness greater than his would be, who would neglect the study of his profession, and yet venture on the charge of interests like these; and I can imagine no ambition more honourable, no envy so praiseworthy, as that which strives to emulate the acquirements of those who are daily occupied in giving safe guidance through the perilous passages of disease, and who, in all these various difficulties and dangers, can act with the energy and calmness that are the just property of knowledge."

About the same time Mr. Paget published an interesting pamphlet containing all the records of Harvey preserved in the Journals of St. Bartholomew's, with notes elucidating them. Meanwhile, having been appointed Professor of Anatomy and Surgery to the College of Surgeons, an office which he held from 1847 till 1852, the lectures which he delivered being reported in the medical journals, as well as listened to with delight by large audiences, were recognised as among the most masterly modern contributions to surgical science. His prolonged study of the pathological collections belonging to the College and to St. Bartholomew's in preparing the catalogues, enabled him to illustrate his lectures in a most interesting and

valuable manner. The lectures were collected and published in 1853, and have ever since occupied a similar lofty position to the lectures on medicine by Sir Thomas Watson. They illustrate the general pathology of the principal surgical diseases, in conformity with modern advances in physiology. In several recent editions a distinguished pupil of Sir James Paget, Professor Turner of Edinburgh, has revised the lectures from the pathological point of view, while the author has continued to revise them in their clinical aspect.

The leading topics under which these famous lectures are comprised are: Nutrition, Hypertrophy, Atrophy, Repair, Inflammation, Mortification, Specific Diseases, and Tumours. The concluding passage of the second lecture, on "The Conditions Necessary to Healthy Nutrition," is a fine exposition of a view of the relation between the mind and a changing brain. "In all these things, as in the phenomena of symmetrical disease, we have proofs of the surpassing precision of the formative process, a precision so exact that, as we may say, a mark once made upon a particle of blood or tissue is not for years effaced from its successors. And this seems to be a truth of widest application; and I can hardly doubt that herein is the solution of what has been made a hindrance to the reception of the whole truth concerning the connection of an immaterial mind with the brain. When the brain is said to be essential, as the organ or instrument of the mind in

its relations with the external world, not only to the perception of sensations, but to the subsequent intellectual acts, and especially to the memory, of things which have been the objects of sense—it is asked, how can the brain be the organ of memory when you suppose its substance to be ever changing? or how is it that your assumed nutritive change of all the particles of the brain is not as destructive of all memory and knowledge of sensuous things as the sudden destruction by some great injury is? The answer is—because of the exactness of assimilation accomplished in the formative process; the effect once produced by an impression upon the brain, whether in perception or in intellectual act, is fixed and there retained; because the part, be it what it may, which has been thereby changed, is exactly represented in the part which, in the course of nutrition, succeeds to it. Thus, in the recollection of sensuous things, the mind refers to a brain in which are retained the effects, or rather the likenesses of changes that past impressions and intellectual acts had made. As, in some way passing far our knowledge, the mind perceived and took cognisance of the change made by the first impression of an object, acting through the sense organs on the brain; so afterwards, it perceives and recognises the likeness of that change in the parts inserted in the process of nutrition.

"Yet here also the tendency to revert to the former condition, or to change with advancing years, may

interfere. The impress may be gradually lost or superseded, and the mind, in its own immortal nature unchanged, and immutable by anything of earth, no longer finds in the brain the traces of the past."

In 1854 Mr. Paget gave one of the series of lectures on Education at the Royal Institution, in which Whewell, Faraday, and others took part. His lecture on the Importance of the Study of Physiology as a branch of education for all classes, was marked by elevation of thought and practicality of aim. One interesting point that he dwelt on was that a wider scheme of education would be more likely to discover men fitted for particular work. "It has seemed like a chance," he said, "that has led nearly every one of our best physiologists to his appropriate work; like a chance, the loss of which might have consigned him to a life of failures, in some occupation for which he had neither capacity nor love." The value of physiological instruction is now generally admitted, but the practical application is almost as generally neglected.

Sir James Paget has published but too few of his thoughts to the public and the profession; but all that have been given to the world have been of sterling worth. His Clinical Lectures and Essays, collected in 1875, include some of the most interesting reading imaginable. He deals among other subjects with the various risks of operations, the calamities of surgery, stammering with other organs than those of speech, cases that bone-setters cure, dissection

poisons, and constitutional diseases. Some of the most instructive of the series are those which describe forms of nervous mimicry of serious diseases. An extract from "The Calamities of Surgery" gives clear expression to Sir James Paget's views on preparation for operating:—

"Look very carefully to your apparatus. I have no doubt that you will look very carefully to the edges of your knives and your saws and all things that are mighty to handle; but look to the plaster, look to the ligatures and the sutures, and all the things which are commonly called minor. When I have seen Sir William Fergusson and Sir Spencer Wells operate, I have never known which to admire most; the complete knowledge of the things to be done, the skill of hand, or the exceeding care with which all the apparatus is adjusted and prepared beforehand. The most perfect plaster, the most perfect silk, not one trivial thing left short of the most complete perfection it is capable of. I have no doubt that the final success of their operations has been due just as much to these smaller things as to those greater things of which they are masters."

The lecture on Dissection Poisons was especially called forth by an illness from which he suffered for three months in 1871, caught from attending the *post mortem* examination of a patient who had died of pyæmia. Yet he had no wound or crack of the skin of any kind. In closing the lecture Sir James re-

marked: "Sir William Lawrence used to say that he had not known any one recover on whose case more than seven had been consulted. Our art has improved. I had the happiness of being attended by ten: Sir Thomas Watson, Sir George Burrows, Sir William Jenner, Sir William Gull, Dr. Andrew, Dr. Gee, Mr. Cæsar Hawkins, Mr. Savory, Mr. Thomas Smith, Mr. Karkeek. In this multitude of counsellors was safety. The gratitude I owe to them is more than I can tell—more than all the evidences of my esteem can ever prove."

In an address on Theology and Science, delivered to students at the Clergy School at Leeds, in December 1880, Sir James Paget remarks that "in theology, and in the Christian faith which it expounds, there are not only clear evidences which, in their accumulated force, cannot, I think, be reasonably resisted by those who will fairly collect and try them; but there are convictions of religious faith, not always based on knowledge, or on other evidence than the faith which is "the evidence of things unseen," which may justly be held as unalterable, because they are consistent with revelation, and have been sustained by the testimony of clouds of witnesses, and, I believe, have in many minds the testimony of God's indwelling Spirit." He expresses the belief that the truths and highest probabilities of science and religion may justly be held together, though on different grounds, and that they are not within reach of direct mutual attack. He advises

clerical students, if they touch upon such questions, to undertake some real study in science, by observation, by experiment, by collecting, as well as by reading. "And let your reading be in the works of the best masters, that you may learn their true spirit, their strength, their methods of observing and thinking, their accuracy in describing."

Sir James Paget appears as a champion of moderation in the *Contemporary* controversy on the Alcohol Question. He says that the presumption in favour of moderation is strengthened by comparing those of our race who do not and those who do habitually use alcoholic drinks. "As to working power, whether bodily or mental, there can be no question that the advantage is on the side of those who use alcoholic drinks. And it is advantage of this kind which is most to be desired. Longevity is not the only or the best test of the value of the things on which we live. It may be only a long old age, or a long course of years of idleness or dulness, useless alike to the individual and the race. That which is most to be desired is a national power and will for good working and good thinking, and a long duration of the period of life fittest for these; and facts show that these are more nearly attained by the people that drink alcohol than by those who do not."

Sir James Paget holds or has held appointments too numerous to mention. After a long and honourable career as Assistant-Surgeon and Surgeon to St.

Bartholomew's, he became Consulting-Surgeon. As a member of the Council of the College of Surgeons and for some years President, and also as a member of the Senate, and for some years Vice-Chancellor of London University, he has exercised powerful influence on the improvement of medical education and on medical politics generally. He is Surgeon to the Prince of Wales and Serjeant Surgeon Extraordinary to the Queen. A baronetcy was conferred upon him in August 1871, and he has received honorary distinctions in abundance from both British and foreign universities.

In 1882 in his Bradshawe lecture, "On some Rare and New Diseases," Sir James Paget remarked on the increase in the number of real students, which he has had a large share in creating. "I have been often made happy by the contrast which I have seen while working at the new edition of the catalogue of the pathological specimens in the College of Surgeons' museum. While I was writing the last edition, between thirty and forty years ago, scarcely a student ever entered the museum. Hour after hour I sat alone; I seemed to be working for no one but myself, or for nothing but the general propriety that a museum ought to have a catalogue, though no one might ever care to study with it. Now, and for some years past, a day rarely passes without many pupils and others being at work in every part of the museum."

In the same lecture Sir James clearly showed the value of studying cases not agreeing with the ordinary

types. "We should study all exceptions to rules; never thinking of them as unmeaning or accidental. Especially, we should never use, in its popular but wrong translation, the expression, 'exceptio probat regulam;' as if an exception to a rule could be evidence that the rule is right. If we use it, let this be in its real meaning; translating it, as surgeons should, that an exception probes the rule, tests it, searches it —as the Bible says we should 'prove all things'—to its very boundary."

Finally we may quote some sentences from Sir James Paget's lecture on "Elemental Pathology," delivered before the British Medical Association in 1880, as expressing his philosophy of life. "I hold it to be very desirable that every one of us should, all his life long, study some science in a scientific manner. There seems to be no equally good method for maintaining the temper and the habits, which by making us always good students, will make us as good practitioners as we can be. There is no method so good for maintaining a constant habit of inquiry, with accuracy and perseverance in research, the power of weighing evidence, of calmly judging, and of accurately speaking; none better for cultivating the love of truth, the contempt for fallacies, whether others' or our own, the gentleness and courtesy which are appropriate to the consciousness of the imperfection of our knowledge."

## CHAPTER XXI.

*WILLIAMS, STOKES, AND DISEASES OF THE CHEST.*

ALTHOUGH this country has not enjoyed the distinction of introducing that invaluable instrument, the stethoscope, to medical science, great interest naturally attaches to those who first used the stethoscope in this country. And among these the name of Charles John Blasius Williams is prominent.

CHARLES WILLIAMS, the son of a clergyman of a Cardiganshire family, was born early in the present century at Heytesbury in Wiltshire, where his father was perpetual curate, and custos of the Hungerford almshouse, in which he resided. He was educated at home by his father. His early liking for natural science and medicine may be considered to have come through his mother, who was the daughter of a surgeon, also named Williams, at Chepstow, and had been educated by Hannah More's sisters, and received instruction in reading from Hannah More herself. Before the age of fourteen, having access to some good books on natural philosophy, he had

made for himself two electrifying machines, a battery of Leyden jars, a voltaic pile, and several little telescopes, microscopes, kaleidoscopes, and æolian harps. Thomson's Chemistry enabled him to carry on extended chemical experiments, and to start well at Edinburgh subsequently.

Astronomy, a lifelong hobby, was cultivated in the family after the reading of Chalmers's astronomical discourses; they bought a telescope and did some really good observing. Active games were not lost sight of; and the young Charles excelled all his neighbours in leaping and running. Stilt-walking was a favourite pursuit; and the youth once made a pair of stilts with a footing twelve feet from the ground, mounted on which he could walk well, and look into the upper windows of the house. Natural history tastes were further carried out in a somewhat unusual direction. Poultry and all kinds of domestic animals were studied so minutely, and their cries imitated so closely, that Charles could influence their behaviour towards himself just as if he had been one of themselves.*

In the autumn of 1820 Charles Williams entered at Edinburgh University, attending Hope's interesting lectures on Chemistry and the dry prelections of Monro tertius on Anatomy, alternated with Barclay's extra-academical class. Later he diligently attended

* A most entertaining account of his encounters with a game-cock is given in Dr. Williams's "Memoirs of Life and Work," 1885, from which most of these particulars are derived,

W. P. Alison's courses of lectures, and had much personal instruction from him. He had not proceeded far in his medical studies before he became absorbed in chemical physiology, and especially in relation to respiration and animal heat. Carefully studying all the most recent chemical discoveries, he made new experiments showing that the change of colour between venous and arterial blood could take place when the blood was enclosed in an animal membrane out of the body, and surrounded by atmospheric air. Thus in 1823 he anticipated what Professor Graham so largely developed in relation to the general permeability of animal membranes. He further discussed the origin of animal heat, and suggested various developments of the theory of combustion. The paper, later amplified into a thesis for graduation in 1824, attracted Alison's high commendation, although Hope had returned the paper with the remark that the subject was quite proper for a young gentleman's thesis, but that he declined to enter into the subject.

In 1824–5 the young doctor heard Charles Bell's lectures on the Nervous System at the London College of Surgeons, and attended the surgical practice of several of the London hospitals. At midsummer 1825 he went to Paris, and in addition to French literature studied painting, becoming a good amateur landscape-painter both in water-colours and oils. In the winter he attended Majendie's lectures on Physiology and the practice of Dupuytren, Laennec, and many others.

But Laennec, the great auscultator, then in his last year of life, gained his most ardent devotion. It was surprising, says Dr. Williams, how little he was valued by French students. Those who attended his clinique were chiefly foreigners. M. G. Andral's *post mortem* examinations also he found invaluable.

The chief discoveries relating to auscultation were undoubtedly Laennec's; yet his knowledge of acoustics was by no means profound, and he was often not successful in explaining rationally the sounds that he heard in the chest. Dr. Williams soon started in the path of applying acoustic laws in this field, and in 1828 he produced his valuable "Rational Exposition of the Physical Signs of Diseases of the Chest," suggesting various improvements in the construction and use of stethoscopes. Returning to London, Dr. Williams derived great benefits through an introduction to Dr. (afterwards Sir James) Clark, so long attached as physician to the Queen, and from the family acquaintance with Lord Heytesbury. His work above mentioned was favourably reviewed, and soon made its way; and many of his explanations are accepted to the present day. After various travels with patients, he settled in Half Moon Street, Piccadilly, in 1830, having married his cousin, Miss Harriett Jenkins, of Chepstow.

Becoming a member of the Royal Institution, Dr. Williams was introduced to Faraday, and was soon engaged to write for the "Cyclopædia of Practical

Medicine," to which he contributed numerous valuable articles on auscultation and diseases of the chest. In these articles he recommended strongly the cure of catarrh by the heroic process of reducing the supply of fluid. The remedial uses of counter-irritation were carefully expounded: and dyspnœa, difficult or distressed breathing, was clearly described.

In 1833, while practice grew but slowly, the second edition of the Rational Exposition was brought out, containing an enlarged section on the sounds of the heart in health and disease. For some years Dr. Williams had considered the questions involved, and by experimental inquiries in 1835 he established that several causes to which they had hitherto been ascribed could not be the cause of the sounds of the heart, and that the first sound was produced by the muscular contraction of the ventricles, and the second by the reaction of the arterial blood tightening the semilunar valves. His anticipation by Rouanet in 1832 in the latter point has, however, been more recently made evident. A third edition of his book, now of increased importance, was published in 1835, under the title of "The Pathology and Diagnosis of Diseases of the Chest, illustrated especially by a Rational Exposition of their Physical Signs." It was reprinted in America, and translated into German and Swedish. The same year he was elected F.R.S.

In 1836 Dr. Williams was asked to give lectures on Diseases of the Chest at the Anatomical School in

Kinnerton Street, connected with St. George's Hospital. In 1836–7 he was president of the Harveian and the Westminster Medical Societies. In the summer of 1837 he worked to prepare for the second Report of the British Association Committee on the sounds of the Heart, in which were brought forward important experimental results in regard to morbid murmurs associated therewith. In 1835 he had shown that the true ground of distinction between different forms of disease of the heart's valves lay in the different direction in which the sonorous currents spread the sounds, and imparted them to the chest walls. Thus he first established the distinction between basic and apex murmurs, developing his views more fully in 1836–7–8.

In 1839 Dr. Williams was elected Professor of Medicine to University College, and physician to its hospital on Elliotson's retirement. Work now crowded upon him; in the first winter session he gave 150 lectures and examinations in six months, visited the hospital almost every day, and gave a weekly clinical lecture. Up to this period *post mortem* examinations at the hospital had been made in a mere open shed, with a wooden shelf, scarcely screened, and without a table or a supply of water. Dr. Williams himself planned a proper *post mortem* theatre; and with the plan he offered £50 towards the cost,—a munificent mode of action which speedily secured the building of the required theatre. Dr. Williams's practical teaching

and luminous lectures caused the Medical School to increase still more rapidly. He had a class of over two hundred. In 1840 an experimental research in which Dr. Williams was assisted by Prof. Sharpey proved the muscular contractility of the bronchial tubes, and confirmed the great influence of belladonna and stramonium as remedies in asthma, in suspending this contractility.

The winter of 1840–1 was occupied largely with original experiments on congestion, determination of blood, and inflammation, which Dr. Williams treated of in the Gulstonian Lectures at the College of Physicians in 1841. His results and views were, as acknowledged by eminent men recently, twenty-five years in advance of his time. Both Virchow and Burdon-Sanderson have acknowledged their great value. Dr Williams claims that he first pointed to enlargement of the arteries leading to a part as the direct physical cause of determination of blood to that part. "When the web of a frog's foot is gently irritated by an aromatic water, the arteries may be seen through the microscope to become enlarged, and to supply a fuller and more impulsive flow of blood to the capillaries and veins which then all become enlarged too: the whole vascular plexus, including vessels which before scarcely admitted red corpuscles, then becomes the seat of a largely increased current" (*London Medical Gazette* July 1841).

The year 1841 was marked by the first public step

taken to establish the Hospital for Consumption and Diseases of the Chest, which originated with Mr. (afterwards Sir) Philip Rose. A clerk in his firm suffering consumption found no hospital willing to admit him, on the plea of the lingering and incurable nature of the disease. This started the idea of a special hospital, which Dr. Williams cordially supported, and to which he became consulting physician. The history and great success of the Brompton Hospital cannot be followed here; in 1882 it had 331 beds. The great Virchow, when he visited it in 1881, said, "Here *everything* is done for the sick."

In 1843 Dr. Williams published the "Principles of Medicine," a work in which physiology and pathology were largely employed to form a basis for scientific medicine. It was received with high approval, and became a standard work in America. New editions appeared in 1848 and in 1856. Sir James Paget and Sir James Simpson among others have given it the stamp of their marked approbation. The *Lancet* gave it almost unqualified praise. In 1846 the Pathological Society of London was established, and Dr. Williams was chosen its first president. Its objects were the exhibition, description, and classification of morbid specimens, and the promotion of pathological research by systematic observation and experiments. In his opening address, Dr. Williams answered the sceptical question, "What is the use of opening bodies? We never find what we expected:" by describing a *post*

*mortem* examination of a remarkable case of pulmonary disease. The examination had been concluded before Dr. Williams arrived, and he was told that there was enlargement of the heart, which the physician in charge expected, and was satisfied. Dr. Williams insisted on careful inspection of the lungs, which disclosed extensive consolidation, and in addition an unexpected general dilatation of the bronchial tubes. This was the case in which he first discovered the connection between that change and pleuro-pneumonia. The very appropriate motto of the Society, "Nec silet mors," was suggested by Dr. Williams.

At the end of the winter session of 1849 Dr. Williams resigned his professorship and physiciancy, his health having severely suffered from overwork, and private practice increasing rapidly. He removed to Upper Brook Street, and here continued for twenty-four years in full practice. In January 1849 Dr. Williams published his first account in the *London Journal of Medicine*, on Cod-Liver Oil in Pulmonary Consumption. He had been studying its application for three years, but of course the priority in recommending it belongs to Dr. Hughes Bennett. It was only in 1846, when a purified oil had been prepared from the fresh livers of the fish, that Dr. Williams found patients willing to take the oil, and in 1848 he wrote that he had prescribed the oil in 400 cases of tubercular disease of the lungs, and in 206 out of 234 recorded cases its use was followed by marked

improvement. The administration of cod-liver oil is such a commonplace of the present day that it can scarcely be realised that it is a novelty almost exclusively belonging to the present half of the nineteenth century. And to Dr. Williams very much of the credit, and of the proof of its efficacy, is due. A lady first visited on September 3, 1847, appeared at the verge of death. Cod-liver oil restored her in a few weeks, and she lived many years after. This was a sample of the experience which, after many years' testing, led Dr. Williams to say, in the great work on pulmonary consumption published by himself and his son, Dr. C. T. Williams, in 1871, that the average duration of life in phthisis had been at least quadrupled. Of 1000 cases tabulated, 802 were still living at the last report, and many were expected to live for years.

The New Sydenham Society, started in 1858, also found an apt first president in Dr. Williams. Its usefulness in improving medical literature by translations and republications has been and is very great. The Lumleian Lectures at the College of Physicians followed in 1862, and were entitled "Successes and Failures in Medicine." They were not published till 1871, when they appeared in the *Medical Times and Gazette.* Great attention was directed in them to the hopes and prospects of prevention of disease. In 1873 Dr. Williams was elected to the Presidency of the Royal Medical and Chirurgical Society, which he held for two years, though suffering from gradually increasing deafness.

In 1874 he was appointed Physician-Extraordinary to the Queen. In 1875 he retired to Cannes, where he has since renewed his earlier astronomical studies, and made some important observations on sun spots. So in scientific recreations, and in Biblical studies in which he has long been deeply interested, the veteran physician whom Dr. Quain describes as "the principal founder of our modern school of pathology," passes the closing years of a protracted life.

The Irish Schools of Medicine have had a briefer history than those of Edinburgh and London, but have produced men whose character and labours rank among the highest. WILLIAM STOKES, born in July 1804 in Dublin, was the son of Whitley Stokes, Regius Professor of Medicine in the University, a man of lofty aims and untiring energy, and a very successful teacher of medicine. Father and son alike were students of the Edinburgh Medical School; but the son owed much to personal companionship with his father. After a few months at Glasgow, young Stokes entered at Edinburgh early in 1823, and soon came in contact with Dr. Alison, who exercised a profound influence upon him; "the best man I ever knew," he declared. Such striking progress did he make, that before he left Edinburgh, in 1825, he had written and published a little book on "The Use of the Stethoscope," which he was fortunate enough to sell for £70.

On settling in Dublin, young though he was, Stokes

was elected Physician to the Meath Hospital, in succession to his father. His colleague, Graves, one of the most remarkable men Dublin had produced, exercised a striking influence over him. At twenty-two Stokes was already lecturing and giving clinical instruction to a crowd of pupils. The time was one of acute distress and poverty in Ireland; fever raged in Dublin, owing to the distress caused by the failure of the potato crop in the summer of 1826. The Meath Hospital was crowded, and the young physician was taxed to the utmost, and his benevolent charity became fixed as a second nature.

During these years of activity, a powerful special object was employing his most persistent thought and observation. He was diligently storing his mind with every fact and inference bearing on diseases of the lungs. In 1837 his observations were published in the classic work on "Diseases of the Chest." It at once placed him, says Sir Henry Acland in the memoir prefixed to the edition published by the New Sydenham Society in 1882, in the front rank of observers and thinkers. His exposition of the use of auscultation in bronchitis and the affections of the chest was most valuable.

In 1842 Stokes became Regius Professorof Physic in Dublin University, in succession to his father. From this time, though he contributed occasional papers, lectures, and cases of value to the *Dublin Journal of Medical Science*, and to the medical societies, he

published no book till 1854, when a valuable treatise on Diseases of the Heart confirmed his reputation. In this he paid great attention to functional disturbances of the heart, where no organic disease was present. He says with great modesty, "the diagnosis of the combinations of diseases, even in so small an organ as the heart, is still to be worked out. . . . As the student fresh from the schools, and proud of his supposed superiority in the refinements of diagnosis, advances into the stern realities of practice, he will be taught greater modesty, and a more wholesome caution. He will find, especially in chronic disease, that important changes may exist without corresponding physical signs—that as disease advances its original special evidences may disappear—that the signs of a recent and trivial affection at one portion of the heart may altogether obscure, or prevent, those of a disease longer in standing and much more important—that functional alteration may not only cause the signs of organic lesion to vary infinitely, but even to wholly disappear—that the signs on which he has formed his opinion to-day may be wanting to-morrow; and, lastly, that to settle the simple question between the existence of functional and that of organic disease, will occasionally baffle the powers of even the most enlightened and experienced physicians."

This treatise is acknowledged to be one of the most acute, graphic, and complete accounts of the clinical aspects of heart disease. In 1854 also he published a

series of lectures on Fever in the *Medical Times and Gazette*, which were collected into a volume, with additions in 1874. Here he showed himself as still sceptical of the advances made by Jenner, Murchison, and others. As he wrote in one of the lectures, "there is nothing more difficult than for a man who has been educated in a particular doctrine to free himself from it, even though he has found it to be wrong," and he could never free himself from Alison's strong belief that fevers were essentially alike.

Very early in his career Stokes was overwhelmed with private practice. On more than one occasion he spoke and wrote strongly regarding the exertions and the mortality of Irish doctors in combating fevers and cholera, while receiving the merest pittance from Government for their services. His feelings as to everything relating to the welfare of the profession and the general culture of the student were actively displayed. "Let us emancipate the student," he said, "and give him time and opportunity for the cultivation of his mind, so that in his pupilage he shall not be a puppet in the hands of others, but rather a self-relying and reflecting being. Let us ever foster the general education in preference to the special training, not ignoring the latter, but seeing that it be not thrust upon a mind uncultivated or degraded."

Prevention of disease, too, engaged Stokes's earnest attention, before sanitary science had come into fashion. "A time may come," he said, in closing one of his

addresses, "when the conqueror of disease will be more honoured than the victor in a hundred fights."

Sir Henry Acland says of Stokes: "The study of man was with him an instinct, both on the material and on the intellectual side. On the material side; for he was a physiognomist, a great judge of character, and had a keen perception of all physical characteristics, qualities which he obtained by intense observation of men in disease, of men in health, and of persons in every class of society and every kind of occupation. On the intellectual side; for the phenomena of man's external nature were to him only expressions of the mind working within,—mind the result of inheritance —mind formed by itself—mind the result of circumstance. The second thing to be remarked was his intense interest in every form of human character, in persons of every age, occupation, and condition. He had that which many accomplished persons have not, the keenest sense of humour, which sparkled up in a way quite indescribable. He combined with real delight in all intellectual development the most tender human interest."

Stokes was passionately fond both of natural scenery and of landscape art; and he enjoyed the companionship and friendship of the best artists, and at the same time appreciated greatly the interests of humble life and the racy humour of the Irish peasantry. He wrote some charming descriptions of scenery, and was well acquainted with various schools of art. The antiquities

and history of Ireland too, found in him an accomplished and appreciative student; and it was felt to be an appropriate tribute to his variety of taste as well as his professional skill when he was chosen President of the Royal Irish Academy in 1874.

One valuable habit Dr. Stokes ascribed to his father. "My father left me but one legacy, the blessed gift of rising early." This often meant getting up between four and five, when he would study and write till eight. During a long day's practice he was always exercising the most genial influence, whether over refractory students or harassed patients. At the close of the day his hospitality was as attractive as his professional manner during the earlier hours.

In 1870 Mrs. Stokes died, and from this blow her husband never fully recovered. In 1876 he found himself compelled to withdraw from his many public posts, and retire to his cottage at Carigbraig, where to the last the flights of birds which he had encouraged and trained came to seek their food at his hands. He died on January 6, 1878.

## CHAPTER XXII.

### *SIR HENRY THOMPSON AND CREMATION.*

THE mode of disposing of the remains of the dead is naturally one upon which doctors may be expected to have a good deal to say. As guardians of the health of the living, the dangers and diseases which the material remnants of our deceased friends may occasion the living must concern the medical profession. The increasingly dense aggregation of human beings in great towns has impressed the last two generations with the necessity of doing something to prevent disease from spreading through delay in burial, and the use of unsuitable burial-places. But for the most part the efforts which have been made have only taken the form of pushing the evil a little further off; and a little mathematical calculation will show that the present cemeteries must soon be surrounded by habitations, and some fresh arrangements will have to be made. To cope with these evils the practice of cremation has been vigorously advocated, as a more rational and healthy mode of disposing of the dead, by the Cremation Society, of which Sir HENRY THOMPSON is the President.

This distinguished surgeon is the son of Mr. Henry Thompson of Framlingham, Suffolk, having been born on August 6, 1820. It is stated that Mr. Thompson objected to his son's studying medicine, believing that the profession had a sceptical tendency. Thus it was not till he had reached the age of twenty-one, and became entitled to some property in his own right, that the subject of this chapter was free to pursue his chosen profession. He studied chiefly at University College, London, and also in Paris. He obtained the M.B. degree at London University in 1851, and the Fellowship of the College of Surgeons in 1853, and in the same year was appointed assistant-surgeon at University College Hospital. In 1852 and again in 1860 he won the Jacksonian Prize at the College of Surgeons for essays on subjects to which he had devoted much of his life-work.

The two works on which Sir Henry Thompson's reputation among the medical profession chiefly rests are his "Clinical Lectures on Diseases of the Urinary Organs," and his "Practical Lithotomy and Lithotrity," both of which have gone through numerous editions; but he has also written many smaller treatises on allied subjects, and his articles in Holmes's "System of Surgery" almost reach the dimensions of separate works. His practice has grown to large dimensions in this department, and in 1877 he was able to publish a list with particulars of 500 cases in which he had performed operations for stone in the bladder, being he believed

the largest ever published by an operator. The unrivalled extent, also, to which he was enabled to utilise the experience of other surgeons, by their communication of their cases to him, made his book on lithotomy and lithotrity of unique value.

Sir Henry Thompson is known to have made very large use of the operation devised by Civiale of Paris, in 1817, for crushing stones into powder or gravel, rendering it unnecessary to perform the serious operation of lithotomy. Civiale's first operations of this kind were performed in 1824, and to him the introduction and successful application of the method is due. The operation has been largely improved of late years, and much of this is due to Sir Henry Thompson. Owing to his well-known skill in this department of practice, he was called in to the late King of the Belgians in 1863, and succeeded in affording him relief by operation, when the most distinguished Continental surgeons had failed. The honour of knighthood was subsequently conferred upon Mr. Thompson by Queen Victoria in recognition of his great services to her uncle. About this time Sir Henry became full surgeon to University College Hospital. He has since relinquished active work at the hospital, becoming Consulting Surgeon and Emeritus Professor.

Sir Henry has become known to the public in connection with several important social and religious questions. One which excited much controversy was his letter to Professor Tyndall in regard to prayer for

the sick, which appeared in the *Contemporary Review* in 1872. After classifying the various objects of prayer, and considering the possibility of testing the actual results of prayer, he says: "There appears to be one source from a study of which the absolute calculable value of prayer (I speak with the utmost reverence) can almost certainly be ascertained. I mean its influence in affecting the course of a malady, or in averting the fatal termination. For it must be admitted that such an important influence manifestly either does, or does not exist. If it does, a careful investigation of diseased persons by good pathologists, working with this end seriously in view, must determine the fact. The fact determined, it is simply a matter of further careful clinical observation to estimate the extent or degree in which prayer is effective. And the next step would be to consider how far it is practicable to extend this benefit among the sick and dying. And I can conceive few inquiries which are more pregnant with good to humanity when this stage has been arrived at."

The practical method proposed for testing the question was that a single ward or hospital, under the care of first-rate doctors, containing patients suffering from diseases best understood, should be made a subject of special prayer by the whole body of the faithful for three or five years, and that at the end of that time the mortality should be compared with the past rates, and also with that of other leading hospitals during the

same period. But the experiment was never tried, owing to the storm of obloquy and controversy with which the proposal was greeted, in which scant regard was paid to the evident good faith of the proposer.

Sir Henry Thompson soon came before the public in a new light. Having failed to get people to pray systematically for the sick, he next attempted to induce them to burn their dead, a proceeding which, as it appeared, was little less shocking to many than the former proposition had proved. The first paragraph of his first article in the *Contemporary Review* (January 1874), since reprinted, with a second on the same subject, struck a sensational key.

"After death! The last faint breath had been noted, and another watched for so long, but in vain. The body lies there, pale and motionless, except only that the jaw sinks slowly but perceptibly. The pallor visibly increases, becomes more leaden in hue, and the profound tranquil sleep of death reigns where just now were life and movement. Here then begins the eternal rest.

"Rest! no, not for an instant. Never was there greater activity than at this moment exists in that still corpse. Activity, but of a different kind to that which was before. Already a thousand changes have commenced. Forces innumerable have attacked the dead. The rapidity of the vulture, with its keen scent for animal decay, is nothing to that of nature's ceaseless agents now at full work before us."

After explaining the process of animal decomposition, and describing the various modes of disposing of the dead between which it is necessary to choose, the writer went on to insist that our present mode of burial is certainly injurious to health either now or in the future, and constitutes in reality a social sin of no small magnitude. A curious aspect of this question was brought to light by the mention of the large annual importation of bones for manuring the soil, while we bury a vast quantity of human bones annually, too deep in the earth to be useful agriculturally. The evils of burial customs and expenditure were also dwelt upon, and then the new, yet old plan of cremation was advocated, practically following nature's indication, and hastening the process so as to make it safe, without unpleasantness. It was suggested that funeral rites could be most appropriately associated with cremation. "Ashes to ashes, dust to dust" would express a literal and evident fact. The condition of many churchyards, past and present, has given conclusive evidence that the present mode of burial consigns moist remains to water or damp, and generates loathsome effluvia, too often causing severe disease in those living near.

This subject is still one of controversy, though it has emerged into "practical politics" by reason of a decision by Mr. Justice Stephen that cremation is not illegal under the present law. Sir Henry Thompson continues his vigorous efforts in favour of cremation.

Sir Henry has also distinguished himself as an advocate for great moderation and even total abstinence in the use of intoxicating liquors, stating that without them he can do his work better and with more zest, and that his constitution has improved under abstinence. Among his lighter works, "Food and Feeding" is pleasant and popular; while a still later display of varied literary tastes is seen in a medical novel, "Charley Kingston's Aunt," published under the pseudonym of Pen Oliver.

The artistic tastes and attainments of Sir Henry Thompson are well known. He studied painting under Elmore and Alma Tadema, and has frequently exhibited at the Royal Academy. He has a very fine collection of blue and white Nankin china, of which a quarto catalogue has been published.

## CHAPTER XXIII.

### *GRAVES, HUGHES BENNETT, AND CLINICAL TEACHING.*

THE subjects of this chapter, both men of great influence, left a decisive mark on the systems of clinical teaching in their respective schools of medicine, besides rendering great services to physiology and to medicine.

In Dublin University a Regius Professorship of Physic dates from the time of the Restoration, and other chairs were subsequently founded. The Irish College of Surgeons was established as late as 1784, but nothing great came of it for many years. A Scotchman, Cheyne, settled in Dublin, published in 1817 the first volume of the Dublin Hospital Reports, and by the excellence of his own clinical reports on cases of fever, gave a good tone to the work of the Irish school But the elevation of the Dublin Medical School to the high rank which it has ever since maintained was the work emphatically of Robert Graves and of William Stokes.

The Graves family, descended from a colonel in Cromwell's cavalry, who had acquired considerable

estates in Limerick county after Cromwell's subjugation of the country, was represented at the close of the last century by the Regius Professor of Divinity in Dublin University, and one of the senior Fellows of Trinity College, Richard Graves, D.D. His three sons, Richard, Hercules, and Robert obtained at the degree examinations of three successive years the gold medal in science and in classics.

ROBERT JAMES GRAVES, born in 1795 or 1796, after going through a complete arts course, and such medical study as Dublin then afforded, graduated M.B. at Dublin in 1818. He then betook himself to other schools, and successively studied in London, in the most celebrated Continental schools, and in Edinburgh, being away from Dublin more than three years. He had an excellent language-faculty, and once, having forgotten his passport, was imprisoned for ten days in Austria as a German spy, the authorities insisting that no Englishman could possibly speak German as he did. During his stay in Italy, Graves, who had considerable artistic capacity, accidentally made the acquaintance of Turner, the celebrated painter, and became his companion on many journeys. An interesting notice of Graves' intercourse with Turner has been given by Professor Stokes.* It appears that the two lived and travelled together for months without either of them inquiring the name of his companion.

* Biographical Notice, prefixed to Graves' "Studies in Physiology and Medicine," 1863.

On a voyage from Genoa to Sicily Graves' courage and decision were strikingly put to the test when the captain and crew, in a terrific gale, were about to quit the ship in the only boat, leaving the two passengers to their fate. Graves, though ill, seized an axe, and stove in the boat, took command, repaired the pumps from the leather of his own boots, and saved the ship.

In 1821 Graves returned to Dublin, and at once took a leading position. Dr. Stokes, for a short time his pupil, and his life-long friend, says of him at this time: "Nature had been bountiful to him: he was tall in stature, of dark complexion, and with noble and expressive features. In conversation he possessed a power rarely met with; for while he had the faculty of displaying an accurate and singularly varied knowledge without a shade of egotism, he was able to correct error without an approach to offence. He had at once a warm and a sensitive heart, and ever showed lasting and therefore genuine gratitude for the smallest kindness. Loving truth for its own sake, he held in unconcealed abhorrence all attempts to sully or distort it; and he never withheld or withdrew his friendship from any, even those below him in education and social rank, if he found in them the qualities which he loved, and which he never omitted to honour."

"It is to be observed that as his mind was open and unsuspicious, he occasionally fell into the error of thinking aloud without considering the nature of his audience, and of letting his wit play more freely, and

his sarcasm, when defending the right, cut more deeply than caution might dictate."

During the year 1821 Graves was elected physician to the Meath Hospital, and also became one of the founders of the Park Street School of Medicine. At this time clinical investigation and clinical teaching could scarcely be said to exist, and the pathological studies of other schools were rather held in contempt. The methods in vogue in Edinburgh had not impressed Graves favourably. Students were not then regularly called upon to investigate cases for themselves, nor trained in so doing: they might obtain their degree without having ever practised diagnosis or co-operated in curing disease even to the extent of writing a prescription. "Often have I regretted," said Graves in his introductory lecture at the Meath Hospital in 1821, "that, under the present system, experience is only to be acquired at a considerable expense of human life. There is, indeed, no concealing the truth—the melancholy truth, that numbers of lives are annually lost in consequence of maltreatment. The victims selected for this sacrifice at the shrine of experience, generally belong to the poorer classes of society, and their immolation is never long delayed when a successful candidate for a dispensary commences the discharge of his duty. The rich, however, do not always escape; nor is the possession of wealth in every instance a safeguard against the blunders of inexperience."

After commenting on the evil effects of ignorant dog-

matism in those of riper years, Dr. Graves went on to expound the plan of Continental clinical instruction. He then alluded to the coarse, harsh, and even vulgar expressions made use of towards hospital patients by Irish medical men of the day, insisting on the necessity of reform in this respect.

The plan that Graves adopted and worked so successfully, essentially consisted in giving to the advanced students charge over particular patients, requiring them to report upon the origin, progress, and present state of their diseases. At the bedside these particulars were verified or challenged by the physician; and then in the lecture-room he discussed with the class the diagnosis, prognosis, and treatment of the cases. The pupil in charge prescribed for the patient, and his prescription was revised and corrected by the physician. The advantages of this system were obvious; students being obliged to give reasons for every plan of cure, became accustomed to a rational and careful investigation of disease, and enjoyed the great benefit of the early correction of their errors.

Nevertheless the system met with much opposition, and even ridicule. As Stokes says, the student was then kept at a distance; no one cared to show him how to teach himself, to familiarise him with "the ways of the sick," to train his mind to reason, and to inculcate the duty as well as the pleasure of original work.

Graves had both knowledge and eloquence; his style was massive, nervous, and forcible; he could command

the minds of his hearers, and he showed himself thoroughly in earnest. "His active mind was ever on the search for analogies, and thus he was led to the discrimination of things apparently similar, and to the assimilation of things at the first view dissimilar, in a degree hardly surpassed by any teacher of medicine."

Having been elected a Fellow of the King's and Queen's College of Physicians, Graves was subsequently appointed Professor of the Institutes of Medicine. In this capacity he gave lectures in which physiology was ably applied to the wants of medical students. In the years 1828–36 he contributed many physiological essays, chiefly to the *Dublin Journal of Medical Science*, of which he was one of the editors till his death, on such subjects as "The Distinctive Characters of Man," "The Chances of Life," "Temperament and Appetite," "The Sense of Touch," &c., all interesting. But it was not till 1843 that he published the work on which his reputation as an author chiefly rests, his "Clinical Lectures on the Practice of Medicine." In relation to this one needs no higher authority in its favour than that of Trousseau, who addressed to the translator of the French edition a letter from which we make the following extracts.

"I have constantly read and re-read the work of Graves; I have become inspired with it in my teaching. . . . The lectures on scarlatina, paralysis, pulmonary affections, cough, headache, have acquired an European reputation. . . . When he inculcated the neces-

sity of giving nourishment in long-continued pyrexias, the Dublin physician, single-handed, assailed an opinion which appeared to be justified by the practice of all ages, for low diet was then regarded as an indispensable condition in the treatment of fevers. Had he rendered no other service than that of completely reversing medical practice upon this point, Graves would by that act alone have acquired an indefeasible claim to our gratitude."

"On the other hand, I cannot sufficiently recommend the perusal of the lectures which treat of paralysis; they contain a complete doctrine, and this doctrine has decisively triumphed. The sympathetic paralyses of Whytt and Prochaska have now their place assigned in science, under the much more physiological name of reflex paralyses."

"Graves is a therapeutist full of resources. . . . There is not a day that I do not in my practice employ some of the modes of treatment which Graves excels in describing with the minuteness of the true practitioner, and not a day that I do not, from the bottom of my heart, thank the Dublin physician for the information he has given me."

"Graves is in my acceptation of the term a perfect clinical teacher. An attentive observer, a profound philosopher, an ingenious artist, an able therapeutist, he commends to our admiration the art whose domain he enlarges, and the practice of which he renders more useful and more fertile."

In 1843 and 1844 Graves was President of the Irish College of Physicians, and was elected a Fellow of the Royal Society in 1849. He was led by his experience to hold strongly the belief that typhus and typhoid were not distinct fevers. His great service to the treatment of fevers is however independent of this. He recognised the ill effects of a lowering system upon fever patients, and steadily set himself to maintain the patient's strength by food and stimulants. One day he was going round the hospital, when on entering the convalescent ward he began to expatiate on the healthy appearance of some who had recovered from severe typhus. "This is all the effect of our good feeding," he exclaimed; "and lest, when I am gone, you may be at a loss for an epitaph for me, let me give you one, in three words :—

"HE FED FEVERS."

Graves's papers on Cholera embodied in his Clinical Lectures give an able history of the progress of that disease, and his researches led him to urge the foundation of a complete network of medical observatories to record especially the rise, progress, and character of disease, whether endemic or epidemic. Had he lived he might have done much to promote this object, only now and partially being attempted in the collective scheme for the investigation of disease under the auspices of the International Scientific Congress. But his labours shortened his life. He constantly corresponded with

pupils all over the world; wrote much for periodical literature on subjects outside medicine, even doing the literary work of a patient whose family were in straitened circumstances. A disease of the liver finally cut him off, after a protracted illness borne with Christian fortitude and faith, on March 20, 1853.

Having been a leading teacher at Edinburgh for many years, JOHN HUGHES BENNETT impressed his individuality upon a larger number of students, and has been more generally recognised than Graves as a man of conspicuous merit. As a clinical teacher, as a physiologist, as a pathologist, as a therapeutist, he had high claims. He reformed the treatment both of pneumonia and of phthisis, and identified a disease, leucocythæmia, whose characters have proved the starting-point for most fruitful investigations.

Bennett was born in London on August 31, 1812, and educated at the Grammar and Mount Radford Schools, Exeter. He was fortunate in having a cultivated mother, a lady of independent thought and spirit, and to her he owed the development of his marked literary and artistic tastes. As a boy she trained him in elocution, in which he afterwards excelled, and widened his thoughts by taking him again and again to the Continent.

Deciding to study medicine, young Bennett was apprenticed to a Mr. Sedgwick of Maidstone, and for a short time attended St. Bartholomew's Hospital. A

little later, however, he decided to enter at Edinburgh University, and soon showed himself an assiduous student. He made the acquaintance of Edward Forbes, J. H. Balfour, John Reid, and others, who afterwards distinguished themselves, and became one of the Presidents of the Royal Medical Society. In 1837 he took the M.D. degree, being awarded a gold medal, on Syme's recommendation, for the best surgical report, and being mentioned as worthy of a second medal by Sir Charles Bell.

Bennett next studied for two years in Paris, founding the Parisian Medical Society, of which he was the first president. Other two years he devoted to study in German medical schools. The microscope and the stethoscope became in his hands familiar implements of research, and he already began to give forth the results of his study, contributing to Tweedie's "Library of Medicine" a large proportion of the second volume dealing with diseases of the nervous system.

Bennett returned to Edinburgh in 1841, and on the 1st October published "Treatise on the Oleum Jecoris Aselli, or Cod-liver Oil, as a Therapeutic Agent in certain Forms of Gout, Rheumatism, and Scrofula, with Cases." His knowledge of this remedy had been acquired in Germany, where cod-liver oil was being used in the treatment of these diseases. Its use had however long been known among the Scotch fishing folk, and Drs. Kay and Bardsley had many years before prescribed it in the Manchester Infirmary. The publi-

cation, however, stagnated, and there was added in 1847 to the remaining copies an appendix of cases benefited by cod-liver oil. By this time its administration was decidedly on the increase, and one firm of druggists in Edinburgh had sold six hundred gallons in the preceding year, as compared with one gallon in 1841. At the same time Dr. C. J. B. Williams was introducing purer forms of the oil in London, as we have already related, and by his writings and practice and study of cases of pulmonary consumption did very much to promote its general use.

In November 1841 Bennett started a course of lectures on histology at Edinburgh, in which he illustrated physiology and pathology by microscopical preparations: he also formed classes for private instruction in microscopical manipulation. At that time minute changes in structure were generally overlooked, and to Bennett belongs the credit of first giving such instruction in a systematic form. He strongly desired to gain the chair of General Pathology at Edinburgh, which was vacant in 1842, but he was unsuccessful.

When he was soon afterwards appointed physician to the Royal Dispensary, Bennett had an opportunity of putting into practice what he had learnt in Germany, by establishing what he called a polyclinical course, his students being taught practically, under the eye of the teacher, to examine and prescribe for patients. It must not be forgotten, however, that Syme had previously introduced a somewhat similar procedure at

his Minto House (Surgical) Hospital. As Pathologist to the Royal Infirmary, Bennett had great opportunities of studying morbid specimens, and he got together a large pathological collection. He further gave courses of lectures on pathology.

For many years Bennett took a large part in maintaining the literary activity of the Edinburgh School. Many papers by him appeared in the *London and Edinburgh Monthly Journal of Medical Science*, of which he subsequently was part and sole proprietor two or three times, being so lucky as to make a profit on each of his transactions.

In 1848 Dr. Bennett was unanimously elected Professor of the Institutes of Medicine (*i.e.*, Physiology) at Edinburgh. In this new work he was soon conspicuous for the practicality of his teaching, and for his continual introduction of matters bearing on pathology and medicine. He made every lecture a complete study, enriching it with all the appliances, material and artistic, that he could command, and embellishing it by finished elocution. He would now and again lay aside his manuscript to comment upon, and frequently to denounce, the opinions of others, by which course he made enemies, for he was not sufficiently measured in his treatment of opponents. Yet it might safely be said that he was not actuated by personal hostility, but only by antagonism of view. Still he was too favourable to his own work, and did not adequately appreciate other men. The general

student enjoyed those peculiarities of Dr. Bennett of which he did not himself feel the brunt, but in the clinical class or in the examination hall his unsparing logical acumen tasked the student mind somewhat severely, and he was a generally dreaded examiner.

From the peculiar organisation of Edinburgh work Bennett was expected to be a clinical teacher of medicine as well as a professor of physiology; thus the importance of his work in the infirmary was as great as that in the lecture-room. He was a clinical teacher of the highest order—nothing was suffered to pass unnoticed. All methods of inquiry into the patient's case were diligently taught to the students, who were led to observe precisely and methodically for themselves. He would test and stimulate his pupils * most acutely by disputation, questioning, and argument; and he thus trained a body of men who carry his impress into all their work.

In 1845 Dr. Bennett published a case of "Hypertrophy of the Spleen and Liver," which is the first recorded case of a disease characterised by a great abundance of white corpuscles in the blood, now known as leucocythæmia. Although Bennett did not at first recognise its true nature, his description and subsequent labours did much to elucidate the disease, and his name must be honourably associated with the subject.

Perhaps, however, the greatest service Bennett rendered to medicine, independently of his promotion

* *Edinburgh Medical Journal*, October 1, 1845.

of the use of cod-liver oil in phthisis, is his strong protest against the lowering treatment in pneumonia and other inflammatory diseases. On this point the *Lancet* (October 9, 1875) says: "He reduced the mortality of uncomplicated pneumonia to *nil*. He demonstrated, not only the dispensableness, but the injuriousness, of the antiphlogistic treatment which had ruled the best minds of the civilised world for ages. Doubtless other physicians were working in the same direction even before Bennett, but he devised a treatment of his own which has given most brilliant results, and he adhered to it and to the pathological views on which it was based so steadily and over so long a series of years as to establish its truth, and so largely revolutionise the practice of medicine in acute diseases." Dr. Bennett's later attacks on the mercurial treatment of liver diseases were almost equally strong with that on bleeding and the antiphlogistic methods, but being undertaken late in life did not leave such an impression.

Dr. M'Kendrick gives in the *British Medical Journal*, October 9, 1875, a list of no fewer than 105 papers and memoirs by Bennett. Among his larger works were "An Introduction to Clinical Medicine;" "Lectures on Clinical Medicine," 1850–6, which were entitled in later editions "Clinical Lectures on the Principles and Practice of Medicine." Of this his principal work, six editions were published during his lifetime in the United States, and the book has been translated into French, Russian,

and Hindoo. "Outlines of Physiology" appeared in 1858, and a Text-book of Physiology in 1871–2. His works on Cancerous and Cancroid Growths, on the Pathology and Treatment of Pulmonary Tuberculosis, and on the Restorative Treatment of Pneumonia, will of course be consulted as containing authoritative statements of his views on these important subjects. He wrote the article on Phthisis in Reynolds' "System of Medicine," Reports on the Action of Mercury on the Liver, and Researches on the Antagonism of Medicines, as reports to the British Medical Association, 1867–1875.

Dr. M'Kendrick, some time Bennett's assistant and deputy, says of him:* "Professor Bennett was a man of clear and logical intellect. What he wanted in breadth of view he gained in penetrative power. Few could grasp more quickly the essentials of a subject, or perceive sooner or more accurately the real point at issue. *Method* was the prevailing quality of his mind which guided him as a teacher. . . . He wanted patience with details, the power of positive scientific expression, and the faculty of taking a wide view of all the facts bearing on what was immediately under discussion. He assumed an attitude of scepticism to all questions until fairly convinced."

"His tendency to indulge freely in critical and sarcastic remarks upon the works of others did not make

* *Edinburgh Medical Journal*, November 1875, p. 473. See also *British Medical Journal*, October 9th, 1875.

him a general favourite with some of his professional brethren, consequently he never attained a large practice as a consulting physician, which was from other considerations his due. He was too much a reformer, too pronounced and outspoken in his opinions; he had too much identified himself with certain lines of thought; and it must be confessed that he did not possess that indefinable manner which inspires confidence both in patient and in practitioner alike."

"By those who knew him best Dr. Bennett was much beloved. He shone in the social circle, where his love of music and power of brilliant conversation cast a radiance through the room."

In 1855 Bennett unsuccessfully competed for the chair of the Practice of Physic at Edinburgh, and he felt his non-success very much. For the next ten years he continued in active work, but in 1865 began to suffer severely from a bronchial and throat affection. Later he was attacked by diabetes, and had to spend several winters on the Continent. In 1874 he resigned his professorship. In August 1875 he was gratified by receiving from Edinburgh the LL.D. degree, his bust by Brodie being presented to the University by former pupils. He was operated on for stone in September following at Norwich, by Mr. Cadge, and died on September 25th, being buried at Dean Cemetery, Edinburgh, by the side of his friends, Goodsir and Edward Forbes. His wife, son, and four daughters survived him.

## CHAPTER XXIV.

### *CONOLLY, MAUDSLEY, AND MENTAL DISEASES.*

THE modern realisation of the association of mental with physical health, the annexation to the sphere of biology of the phenomena of mind, and the concurrent comprehension of the true attitude of the physician towards mental diseases, have doubtless put into the shade achievements less than a century old, and some of them dating from only fifty years ago. Yet the simple discontinuance of the system of restraint practised from time immemorial on almost all lunatics was perhaps a greater practical revolution than the biological one just referred to; and England stands in the forefront of this revolution.

The old lunatic asylums of this country were objects of dread and repulsion. Severity was considered to be an absolute necessity in their management. "The affrighted visitors," says Conolly,* "saw that many were furious . . . and it never occurred to them that habitual severity was the real cause of the habitual fury." New Bethlem in Moorfields two centuries ago was a

* "Treatment of the Insane without Mechanical Restraints," 1856.

place of chains, manacles, and stocks. Down to 1770 the inmates were exhibited to the public at a charge of twopence, afterwards reduced to one penny.

The medical profession had become accustomed to neglect mental diseases, and to acquiesce in severe treatment. Cruelty became developed in ingenious forms. In some Continental asylums patients were terrified by the gradual ascent of water in a well in which they were chained. Machines were imagined by which a newly arrived lunatic could suddenly be raised to the top of a tower, and as suddenly lowered into a deep dark cavern; "if the patient could be made to alight among snakes and serpents, it would be better still." A revolving chair was invented, in which the victim could be strapped and made to gyrate at the rate of one hundred revolutions per minute. This was eulogised as a potent means of quieting the unmanageable, and was supposed to induce the melancholy to take "a natural interest in the affairs of life." We can only make this passing allusion to the way in which ingenuity was exhausted in devising methods of restraint and torture.

Nothing could have been worse than the condition of the Bicêtre and the Salpêtrière, the two large asylums of Paris, when Pinel was in 1793 appointed to the former by Cousin, Thouret, and Cabanis, then newly appointed administrators of the Parisian hospitals. Damp, dark cells, infested by rats, contained dirt-coated beings whose only comfort was a little straw, chained,

brutally ill-treated, and attended by brutal criminals. For nearly ten years previously Pinel's attention had been directed to the treatment of the insane, and now, in spite of difficulties which officials threw in his way, he succeeded in loosening the chains and ameliorating the treatment of the majority of the patients. Yet his reforms nearly cost him his life. Rumours were spread accusing him of some evil motive in unchaining dangerous lunatics, and a mob one day seized him, and uttered the well-known terrible cry "*à la lanterne!*" An old soldier of the French Guard, once a lunatic, whom he had released from chains, cured, and employed in his own service, was appropriately the means of his rescue. Thus was philanthropy once more justified of her children.

At this very period English public opinion had been excited by revelations of cruelty and consequent deaths in the old York Asylum. In 1791 a lady belonging to the Society of Friends was placed in this asylum; her friends were refused admission to visit her, and in a few weeks she died. Inquiries that were made showed great grounds for suspicion, although full details could not be obtained.* But with great promptitude William Tuke, a prominent Friend at York, whose family has continued famous for attention to the affairs of the insane, proposed early in 1792 the establishment of a "Retreat" at York for insane patients, in which sym-

* For details of the exposure of 1813 and 1814, see "A History of the York Asylum," York, 1815.

pathy should be substituted for unkindness, severity, and stripes. The account given by Samuel Tuke in 1813 of its management is still a model in many respects.*

Neither Pinel nor the Tukes were however bold enough entirely to dispense with mechanical coercion. In 1818 Esquirol, the true successor of Pinel in France, found maltreatment still generally prevalent in the provincial asylums of France. In England mechanical restraint continued to be largely employed till Conolly's time, and survives in some private asylums to the present day. We cannot give further details on this head, but hasten to mention the names of two men, Dr. Charlesworth and Mr. Gardiner Hill, who must ever be remembered as the first to give up mechanical coercion entirely in the small asylum of Lincoln. Dr. Charlesworth, physician to the asylum, had for many years diligently watched the effects of mechanical coercion, and gradually lessened the number of instruments of restraint in the asylum. Finally, the total

* For a description of the state of Bethlem Hospital in 1815, see Conolly's work above cited, pp. 26–29. In making this record Conolly says, "Nothing can more forcibly illustrate the hardening effect of being habitual witnesses of cruelty, and the process which the heart of man undergoes when allowed to exercise irresponsible power. Partly from custom, and partly from indifference, and partly from fear, even physicians not particularly chargeable with inhumanity used formerly to see patients in every form of irritating restraint, and leave them as they found them. *Such facts justify the extremest jealousy of admitting the slightest occasional appliance of mechanical restraints in any asylum. Once admitted, under whatever pretext, and every abuse will follow in time.*"

disuse of mechanical restraints was decided on, and put in practice by Mr. Gardiner Hill in 1836 in concert with Dr. Charlesworth, with the most gratifying results.

We now come to the man who more than any other in England may be said to have established the non-restraint system so firmly that it will never be upset. JOHN CONOLLY was born at Market Rasen in Lincolnshire, in 1794. His father, a member of a good Irish family, died young, and the care of a young family fell on his widow, whose maiden name was Tennyson, and whose patience and self-sacrifice her son ever affectionately acknowledged as the main influence which led to his own success. When his mother ultimately married a French gentleman, a political *emigré*, the latter taught his stepson French, and imbued him with a genuine taste for and knowledge of the language. Condillac's essay "On the Origin of Human Knowledge" influenced his mental life. While in his teens his attention was first called to the subject of lunacy by an inspection of the Glasgow Asylum, and he never afterwards ceased to take the deepest interest in it.

At eighteen young Conolly became an officer in a militia regiment, in which capacity he served several years. While still young, he married in 1816 the daughter of Sir John Collins and went to reside in France, on the banks of the Loire. A year later he had decided to enter the medical profession, and in 1817 became a student at Edinburgh University. After a dili-

gent career, in the course of which he was one of the presidents of the Royal Medical Society, he graduated M.D., and settled in practice as a physician at Chichester. Here he became intimately acquainted with Dr. (afterwards Sir John) Forbes, with whom he was afterwards much connected in literary matters.

Dr. Conolly did not remain very long at Chichester, but removed in 1823 to Stratford-on-Avon, where he wrote many contributions to and took part in editing the "Cyclopædia of Practical Medicine," and the *British and Foreign Medical Review*. At Stratford he became alderman and mayor, established a public dispensary, and studied Shakespeare with enthusiasm. This occasioned him afterwards, while practising at Warwick in 1835, to take an active part as chairman of the committee formed for securing the preservation of Shakespeare's tomb, and the restoration of the chancel of the church.

In 1827 Dr. Conolly was appointed Professor of the Practice of Medicine in London University, which appointment he only held four years, finding life as a London physician unsuitable to his tastes. In 1831 he again resorted to the country, establishing himself in Warwick.

The subject of insanity had long engaged Dr. Conolly's attention. He had studied the question both abroad and at home, and had been for five years, (while residing at Stratford) inspecting physician to the Lunatic Houses for the County of Warwick, an

office which he resumed when he settled in Warwick. He had unsuccessfully proposed to the council of the University that he should give his pupils clinical instruction on insanity in one of the lunatic asylums in London. "Thus," says Sir James Clark,* "clinical instruction in mental diseases was thrown back for thirty years in this country."

In 1830 Conolly published his valuable work, "An Inquiry concerning the Indications of Insanity, with Suggestions for the better Protection and Care of the Insane." His objects were to render the recognition of insanity less difficult, by showing in what it differed from those varieties of mind which approached nearest to it; and to point out those circumstances which, even in persons decidedly insane, could alone justify various degrees of restraint. He lamented that during a student's career he only saw cases of insanity by some rare accident. Every lunatic asylum was closed to him, and yet when qualified he might any day have to decide on a patient's insanity. In view of some recent revelations a quotation from the introduction to this work (p. 3) is not inappropriate. "The timidity or ignorance, or it may be, a dishonest motive, of relatives, leads to exaggerated representations; and the great profit accruing from a part of practice almost separated from general medicine, cannot but now and then operate against proper caution in ad-

* Memoir of John Conolly, M.D., D.C.L., by Sir James Clark, Bart., 1869; very ill-arranged.

mitting such representations. When men's interests depend upon an opinion, it is too much to expect that opinion always to be cautiously formed, or even in all cases honestly given. The most respectable practitioners in this department openly justify the authorising of restraint before the patient is seen, and on the mere report of others; and it seems that depositions to the insanity of individuals have been received in courts of law, concerning persons with whom the deponents have never had an interview; and that on these depositions proceedings have been partly founded, of which the results were the imprisonment of lunatics, and restraint over their property. When the affair is conducted with more formality, and the suspected person is visited before being imprisoned, those who visit him are often very little acquainted with mental disorders, and come rather to find proofs of his insanity, which, to minds prepossessed, are seldom wanting, than cautiously to examine the state of his mind.

"If a person of sound mind were so visited, and knew of the visit beforehand, it would not be quite easy for him to comport himself, so as to avoid *conviction* that he was *not* of sound mind. His indignation would pass for raving; his moderation for the proverbial cunning of a lunatic."

After describing the condition of asylums and lunatics at that time, the author considers the constitution of the human understanding and the

inequalities, weaknesses, and peculiarities of mind which do not amount to understanding, and the influence of stimuli, of age, and of disease on the mind, and then discusses the phenomena of insanity and the questions of treatment and protection. He insists on the necessity of the most scrutinising watchfulness over the servants employed in their care. In cases where patients would do themselves or others an injury he insists on watching, instead of mechanical means of restraint. He proposes a complete scheme for the care of all lunatics by the State, providing for perfect publicity of procedure. He finally points out the increasing liability of the nervous system to disorganisation owing to the increased pressure and more varied anxieties of modern life, an observation most fully justified by what has been established since his day.

This work, a most readable and interesting one, both to medical men and to general readers, was not received with nearly sufficient warmth. Too many were wedded to the old systems of treatment; too many knew nothing about the diseases of the mind, and their sympathy could not be aroused in favour of lunatics. So Conolly was left to his country work at Warwick, varied by one year's residence at Birmingham, till 1839, when he was appointed Resident Physician to the Middlesex County Asylum at Hanwell, at that time the largest in England. He had taken the opportunity of visiting the Lincoln Asylum

and gaining all the advantages possible from its experience. He was now satisfied that mechanical restraint was not only unnecessary, but possibly injurious. On few others had the non-restraint system gained a hold. Hanwell had the reputation of being one of the best-managed asylums in England, many patients being occupied in agricultural and other pursuits. Yet one year after Sir William Ellis's resignation, when Conolly took office, "instruments of mechanical restraint of one kind or other were so abundant in the wards as to amount, when collected together, to about six hundred, about half of them being handcuffs and leg-locks."

Conolly entered upon his duties on the 1st June 1839. The asylum then contained 800 patients, and he found forty under continuous mechanical restraint. In his first report to the Quarter Sessions, he informed the Justices that since the 21st of September not one patient had been under restraint. "No form of strait waistcoat, no handcuffs, no leg-locks, nor any contrivance confining the trunk, or limbs, or any of the muscles, is now in use. The coercion chairs, about forty in number, have been altogether removed from the wards." In fact, they had been cut up to make a floor for the carpenter's shop.

This was not accomplished without some trouble and anxiety. It took time to indoctrinate the officers and attendants with the principles of the new system, in which they were deprived of their old prop. The aid

which he received from Miss Powell the matron was most valuable. In ten years not one case was admitted to Hanwell in which mechanical restraint was deemed necessary, although many suicidal patients were among them. In fact, the removal of restraint tended directly and powerfully to promote the recovery of these, by taking away the sense of degradation occasioned by such restraint, by bringing them within the sphere of medical remedial agents and of cheerful influences. The only substitutes allowed were in some cases seclusion of a patient in an ordinary sleeping apartment, and, in extreme cases, in a padded room in which the floor was a bed; such seclusion being immediately reported to the medical officers, and recorded, even when continued only for a few minutes. This was found sufficient to protect the other patients, to calm the refractory one, and act as a tonic and remedial influence. The shower-bath was rarely resorted to except for medical reasons; window-guards, clothing, and bedding of strong materials to prevent tearing, were only required in a few cases. "The great and only real substitute for restraint is invariable kindness," says Dr. Conolly. "This feeling must animate every person employed in every duty to be performed."

Dr. Conolly published the main results of his experience in his Clinical Lectures in the *Lancet* in 1846, and in a work on the Construction and Government of Asylums, in 1847. His annual reports to the Justices detailed the progress of his system, and

he afterwards summarised them and published them collectively. At the end of ten years, finding the non-restraint system in no danger of being abandoned at Hanwell, Dr. Conolly ceased to be resident physician, and became visiting physician, attending at the asylum twice a week, and spending the greater portion of the day there. His interest in the patients, says Dr. Hitchman, seemed never to flag. He would always look out for something to commend in a patient, the hair better kept, clothes more neatly worn, &c., and addressing the patients in the most gentle, affectionate tones, he made his visits always a matter of longing. The old attendants at the hospital in after years spoke of Dr. Conolly's untiring watchfulness in the first years of his experiment. He would visit the wards at all hours of the night to see that his orders were being obeyed, walking noiselessly along the corridors. He was kept up in his arduous duties by an elevated religious principle. "I feel grateful to God," he wrote, "who has intrusted duties to me which angels might stoop to perform." He suffered greatly from an affection of the skin, which kept him awake at night and ill at ease during the day; and hence was liable to fits of depression and irritability which sometimes made him appear impatient.

In 1852, on his resignation of the appointment of visiting physician, Conolly's connection with Hanwell practically ceased, and a piece of plate and his own portrait by Sir W. Gordon were presented to him at a

public meeting by Lord Shaftesbury. In his reply on this occasion Dr. Conolly said: "Those who know me well will believe me when I say there never was an occasion when the sense of merit was less reflected from the breast of the recipient of a public honour, than it is from me at this moment." He further stated that when he had first heard of the establishment of Hanwell Asylum, he was seized with a restless desire to become one day its head.

Many objects of philanthropy had Dr. Conolly's untiring advocacy, both before and after his retirement from Hanwell. Public middle-class lunatic asylums, the education of medical men in mental diseases, the establishment of idiot asylums, especially that at Earlswood, were among these. He was the first doctor applied to by Mrs. Plumbe in regard to the foundation of Earlswood, and his co-operation with Dr. Andrew Reed was of the most essential service to the enterprise.

Dr. Langdon Down, formerly Medical Superintendent at Earlswood, wrote in regard to Conolly: "His visits were the most refreshing incident of my recollection in connection with the asylum. Entering on my work (in 1858) as an untried man, and finding myself allied to an institution which had become unpopular at the Lunacy Board, I was mainly decided on holding a position which had so much to overwhelm one by the influence of Dr. Conolly. That influence was magical. The humility of his character was only

equalled by the real love he manifested for the mentally afflicted.

"At the visits of the Board of Management, he would steal away from his colleagues, and was to be found holding loving intercourse with the little members of my charge in a way that one has never seen before or since. Moreover, he so encouraged every official in his or her work, that the savour of his visit lasted till he again returned. . . . For myself, I have often had to seek his counsel, and never without being struck with his judgment and the fascination of his influence, the high resolve he inspired in one, and what willingness he exhibited to maintain, co-equally with the responsibility, the power of the Medical Superintendent, and thus to prevent a repetition of those evils which he had so bitterly to lament in his own experience."

The years after Conolly left Hanwell were busily occupied with a large practice, especially in mental cases. In a few years his unceasing labour told on him, and he suffered much from chronic rheumatism and neuralgia. Finally he was compelled to retire from practice, when he took up his residence at Lawn House, Hanwell, whence he could see the asylum in which he had spent so many anxious hours. He finally lost mental energy, and was unable to complete several treatises and records of experience which he was contemplating. He, however, left an enduring memorial of his life-work in "The Treatment of the

Insane without Mechanical Restraints," 1856, written in a most readable style. We must not omit to mention his courses of lectures on Insanity at the College of Physicians and at the Royal Institution, his papers on Infantile Insanity, and finally "A Study of Hamlet," in which he brings the most skilfully marshalled arguments to prove that Hamlet's was a real and not a feigned madness. As to Hamlet's treatment of Ophelia in Act II., Scene 1, and more especially in the scene where Hamlet and Laertes met over her grave, he remarked; "The picture of madness here is too minutely true, its lights and shades are too close to nature to have been painted as a mere illustration of feigning, and of feigning without intelligible purpose." Both Sir Theodore and Lady Martin (Miss Helen Faucit) considered his exposition most satisfactory, and that it settled the question finally.

Conolly was carried off, after years of weakness, by an attack of paralysis with convulsions, which was fatal in a few hours, on March 5, 1867. Few have left behind them a brighter record as physician and philanthropist.

Improvement in the treatment of the insane and the knowledge of mental diseases has progressed rapidly in late years, owing to the efforts and studies of many workers, among whom Drs. Bucknill, Tuke, Hood, Lockhart Robinson, and Forbes Winslow are conspicuous. The record of their work would lead us

into too wide a field. But the life-work of one of the sons-in-law of Dr. Conolly, HENRY MAUDSLEY, is of a character which for good or ill has exerted, and is exerting, a powerful influence on younger minds. We come here into a region of work influenced by the philosophy of Darwin and Herbert Spencer, applied to the physiology and pathology of mind, and to the relationship between body and mind. The time is not yet come for an impartial estimate of the striking works which Dr. Maudsley has brought forth in fertile succession, in addition to his extensive labours as one of the editors of the *Journal of Mental Science*. But it is certain that every one who would place himself in a position to estimate the strength of the so-called "materialistic" school, whether he be a metaphysician, a doctor, or a person of average culture, must read Dr. Maudsley's works. They are written fearlessly, and for the most part with admirable lucidity, displaying a knowledge of literature and philosophy not often met with, combined with great practical experience in mental phenomena.

Henry Maudsley was born near Giggleswick, in Yorkshire, on February 5, 1835. After receiving his early education at Giggleswick School, he proceeded to University College, London, and took the M.B. degree at London University in 1856, with the distinction of University Scholar in Medicine. He proceeded to the M.D. degree in 1857. During the years 1859–1862 he was Resident Physician to the Manchester Royal

Lunatic Hospital. Returning later to London he became for a time Professor of Medical Jurisprudence at his old college, and later Consulting Physician to the West London Hospital.

In an article on "The Theory of Vitality," which Dr. Maudsley published in the *British and Foreign Medico-Chirurgical Review* in 1863 (republished in "Body and Mind," 1870), he showed remarkable power for a young man of twenty-eight. His conclusion was that the conscious mind of man blends in unity of development with the unconscious life of nature. He looked for the harmonisation of the idealism of Plato and the realism of Bacon as the expressions of the same truths.

In 1867 Dr. Maudsley published an important work on the Physiology and Pathology of Mind. It was intended to treat of mental phenomena from a physiological rather than from a metaphysical point of view; and secondly, to bring the manifold instructive instances presented by the unsound mind to bear upon the interpretation of the obscure problems of mental science, and to do what he could to put an end to the inauspicious divorce between the two branches of his subject. He energetically exposed the shortcomings of psychologists and metaphysicians, and naturally encountered severe criticism, and it may be allowed that some of his expressions were those of youthful enthusiasm rather than of matured wisdom. But the book had such merits, that a second edition was called

for in the next year, and before long exhausted, after which the book was out of print for some years.

At length Dr. Maudsley republished in a modified form the "Physiology of Mind" in a separate volume of 550 pages (1876), putting it forward as a disquisition, by the light of existing knowledge, concerning the nervous structures and functions which are the probable physical foundations of those natural phenomena, which appear in consciousness, or feelings, and thoughts. In this work he says (p. 47) "that the subjective method—the method of interrogating self-consciousness—is not adequate to the construction of a true mental science has now seemingly been sufficiently established. That is not to say that it is worthless; for when not strained beyond its capabilities, its results must, in the hands of competent men, be as useful as they are indispensable. . . . That which a just reflection teaches incontestably, the present state of physiology illustrates practically. Though very imperfect as a science, physiology has made sufficient progress to prove that no psychology can endure except it be based upon its investigations."

Meanwhile Dr. Maudsley had been called upon in 1870 to deliver the Gulstonian Lectures at the College of Physicians, and these were published in a small book under the title "Body and Mind: an Inquiry into their Connection and Mutual Influence, specially in Reference to Mental Disorders." The first lecture expounded the physical conditions of mental function

in health; the second described some forms of mental degeneracy which showed prominently the operation of physical causes from generation to generation, and the relationship of mental disorders to other diseases of the nervous system. The third included a general survey of the pathology of the mind, and the relations of morbid states of body to disordered mental function.

Meanwhile some important medico-legal cases had brought into prominence Dr. Maudsley's belief that there are many forms of mental disease in which a patient ought not to be held criminally responsible for his actions, although he might be fully cognisant of their nature. This was definitely expressed as far back as 1864 in a pamphlet entitled "Insanity and Crime," a medico-legal commentary on the case of George Victor Townley, by the editors of the *Journal of Mental Science*. It was in 1872 more fully developed by Dr. Maudsley in his "Responsibility in Mental Disease," which has gone through numerous editions.

In 1879 the "Pathology of Mind" appeared in a separate and enlarged form, and contains a systematic exposition of the subject, introduced by an account of sleep, dreaming, somnambulism, and allied states. He then proceeds to deal with the causation of insanity, both social and material, and then further expounds the symptoms of insanity, treating it as one disease with varied manifestations, and then delineating the clinical groups of mental disorders met with in practice and which the physician has to deal with.

One great merit of the book is, that the clinical pictures it contains are drawn from life. An extract from chapter iv., dealing with the influence of conditions of life on the production of insanity, will show how at every step Dr. Maudsley introduces considerations bearing on morality.

"The maxims of morality which were proclaimed by holy men of old as lessons of religion indispensable to the well-being and stability of families and nations, are not really wild dreams of inspired fancy, nor the empty words which preachers make them; founded on a sincere recognition of the laws of nature working in human events, they were visions of eternal truths of human evolution. Assuredly the 'everlasting arms' are beneath the upright man who dealeth uprightly, but they are the everlasting laws of nature which sustain him who, doing that which is lawful and right, leads a life that is in faithful harmony with the laws of nature's progress; the destruction which falls upon him who dealeth treacherously and doeth iniquity, 'observing' not the commandments of the Lord to obey them,' are the avenging consequences of broken natural laws. How long will it be before men perceive and acknowledge the eternity of action, good or ill, and feel the keen sense of responsibility, and the strong sentiment of duty which so awful a reflection is fitted to engender? How long before they realise vividly that under the reign of law on earth sin or error is inexorably avenged, as virtue is indicated, in its consequences,

and take to heart the lesson that they are determining in their generation what shall be predetermined in the constitution of the generation after them?"

A later important work is "Body and Will," 1883. "Its justification from my standpoint," says Dr. Maudsley, "is, that I have been engaged all my life in dealing with mind in its concrete human embodiments, and that in order to find out why individuals feel, think, and do differently, and in what way best to deal with them so as to do one's duty to oneself and to them, I have had no choice but to leave the barren heights of speculation for the plains on which men live and move and have their being. It is not enough to think and talk about abstract minds and their qualities when you have to do with concrete minds that must be observed, and studied, and managed."

This work deals with questions too vast to be summarily discussed; but one aspect of Dr. Maudsley's mind is well expounded in the following extract:—

"In nature, as we see it, we seem to see a conflict of warring opposites; gravitation opposed, or rather indeed complemented, by repulsion; chemical affinities by chemical repulsions; magnetic attraction by electric repulsion; evolution by dissolution; conservation by revolution, quiet or catastrophic; love by hate; self-love by love of kind; heaven by hell. Certain it is that hate and destruction are just as necessary agents as love and production in nature, which could no more be, or be conceived to be, without the one than with-

out the other; and to call the one good more than the other, however necessary from the standpoint of human egoism, is just as if one were to call gravitation good and repulsion bad, as gravitation, had it self-consciousness, would no doubt do. In order to have a theory of cosmogony that shall cover all the facts, it has always been necessary to supplement a good principle by a bad principle, a God of love and creation by a God of hate and destruction. And it must always be so. We may, agreeably to the logic of our wishes, comfort ourselves in our pilgrimage by entertaining the hope and belief of the working out of good through evil and of the permanence of good after the disappearance of evil, just as, if it were useful and pleasing to us to cherish the illusion, we might persuade ourselves that repulsion will one day be annihilated and gravitation endure, or that evolution will continue and dissolution cease to be; but if we look at the matter in the cold spirit of strictly rational inquiry we shall always find abundant reason to believe that the sum of the respective energies of good and evil remains a constant quantity, the respective distribution only varying, and that we might as well try to increase the height of the mountain without increasing the depth of the valley, as to increase the good in the world by purging it of its so-called evil."

Dr. Maudsley became a Fellow of the College of Physicians in 1869, has been President of the Medico-Psychological Association, and received the LL.D. degree from Edinburgh University in 1884.

## CHAPTER XXV.

### *EMINENT SPECIALISTS.*

*SIR ERASMUS WILSON AND SKIN DISEASES; MORELL MACKENZIE AND THROAT DISEASES; COBBOLD AND INTERNAL PARASITES.*

SPECIALISATION is decreed by the will of the public as much as by that of the practitioner. This is true of many professions besides those of medicine. Although the general discernment has always recognised the ability of men with powers of the universal type, these men are rare, and there is a strong tendency to believe that a man cannot be master of the whole field of a science, but may more probably be master of a portion of it. Again, with hawk eye the people who want to be cured of disease mark and then swoop down upon men who appear to them specially capable in one department of medical practice, and no denunciation of specialism, no drawing back on the part of the physician, will avail against this natural selection. The man to whom crowds of patients of one kind flock naturally becomes specially skilled in dealing with them: and it is impossible to stem the tide by saying that such ought not to be the case.

Specialism has been carried to a surprising extent in America, when Dr. Morell Mackenzie informs us, in his article on "Specialism in Medicine," * it would be almost impossible to find a city with ten thousand inhabitants in which there are not three or four specialists; whilst in a city of one hundred and thirty thousand inhabitants, thirteen specialists were found exclusively engaged in treating throat diseases.

The days of encyclopædic knowledge may be past, but the need of a broad, general, scientific, and professional education for the medical man, even a specialist, will never cease. If, as Dr. Mackenzie says, the leviathans of omniscience loom dim and gigantic, like the megatherium and mastodon of remote geological periods, and if the type is as utterly extinct as he believes, it is all the more incumbent on the guides of medical instruction to see that their pupils pass through a broad course of study which shall fairly represent the achievements of the past and the main features of the knowledge of the present. ERASMUS WILSON was a man who undoubtedly gained a good record in general professional knowledge, and knew well the anatomy and physiology of his student days.

William James Erasmus Wilson, son of William Wilson, surgeon, a native of Aberdeen, in early life a naval surgeon, who later settled at Dartford and Greenhithe in Kent, was born on November 25, 1809, in High Street, Marylebone, where his maternal grandfather,

* *Fortnightly Review*, June 1885, p. 775.

Erasmus Bronsdorph, a Norwegian by birth, resided. He was educated at Dartford Grammar School and at Swanscombe, but very soon commenced practical medical work under his father in the parish infirmary. At the early age of sixteen he was sent to London to enter John Abernethy's anatomical class, and there is no doubt that his teacher's individuality powerfully impressed him. But among his friends were some who led his tastes also somewhat deeply into botany and zoology, entomological facts then learnt being destined to bear fruit in his Commentary on Diseases of the Skin.

Wilson was enabled to extend his studies to Paris in 1828 and in 1830, where he attended Cuvier's and Geoffroy St. Hilaire's lectures, and among others saw the practice of Dupuytren, Orfila, and Lisfranc. He became noted for his neat dissections, insomuch that he was nicknamed the "piocheur," or "sap" in English slang. To his excellence in dissection young Wilson joined an equal faculty for drawing, derived from his mother.

In 1826 young Wilson had become a resident pupil with Mr. Langstaff, father of a fellow-student, surgeon to the parish infirmary of Cripplegate. Here in Langstaff's dissecting-room, where many pathological researches were carried on, Wilson made the acquaintance of numerous men of mark who resorted thither, including Jones Quain and William Lawrence. On the establishment of the Aldersgate School of Medicine under Lawrence's régime, Wilson joined it as student, and in

1829–30 won both the surgical and the midwifery prizes. On the day when he attained his majority, November 25, 1830, Wilson took the Apothecaries' Hall diploma.

Having become a member of the London College of Surgeons in 1831, Wilson was asked by Dr. Jones Quain, then Professor of Anatomy and Physiology at University College, London, to be his assistant, and he soon after was appointed Demonstrator of Anatomy under Richard Quain. Wilson was a capital teacher of anatomy, and his private museum of dissections prepared by his own hands fully illustrated his manipulative capacity. He superintended the execution of the illustrations to the celebrated Quain's Anatomy, and also those to Liston's Practical Surgery (1837).

When Dr. Jones Quain retired from University College Hospital in 1838, Wilson resigned his appointments also, and established a school of anatomy under the title of Sydenham College, which however did not prove ultimately successful. He then devoted himself to such private practice as he could obtain in Charlotte Street, Fitzroy Square, eking out his income by taking pupils, and by literary work. In 1838 he appeared as an author with "The Dissector's Manual of Practical and Surgical Anatomy," subsequently producing the "Anatomist's Vade Mecum" (1840), of which many editions have been called for. In the same year he became Lecturer on Anatomy and Physiology at the Middlesex Hospital.

Meanwhile Wilson had made the acquaintance of a man who was destined to turn his thoughts in the direction which became permanent. His father, after retiring from the navy, had taken a mansion at Deham, Bucks, and set up a private lunatic asylum; and in connection with this establishment Wilson met Mr. Thomas Wakley, M.P., the founder of the *Lancet*, and coroner for Middlesex. Mr. Wakley appointed Wilson sub-editor of the *Lancet* in 1840, a post which he held for several years, continuing to write for that journal after resigning the more onerous post when his private practice increased. About this time he became Consulting Surgeon to the Marylebone Infirmary, and gained a very extensive experience of every department of hospital surgery. In fact, it appeared at first that Wilson would probably make his mark as a pure surgeon.

No more certain path, however, opening in this direction, Mr. Wakley considerably influenced Wilson towards choosing a special line of practice as a means of success. There was much open opposition at that time among medical men to the idea of specialisation, and Mr. Wakley succeeded in overcoming Wilson's fear of sinking under the dreaded name of quack. The choice of a specialty was not difficult, as skin diseases or dermatology then constituted an almost uncultivated field. "I have never regretted my choice," he remarked on one occasion;* "there is only one more

* *World*, September 18, 1878.

beautiful thing in the world than a fine healthy skin, and that is a rare skin disease."

In 1842 Wilson brought out his extended systematic work on Diseases of the Skin, and subsequently produced twelve fasciculi of folio "Portraits of Diseases of the Skin." In connection with these we may mention that he took a large share in the well-known five volumes of Anatomical Plates, issued jointly by Dr. Quain and himself. In 1843 he was elected a Fellow of the College of Surgeons, and in 1844 a Fellow of the Royal Society, having contributed to the latter a memoir on a newly-discovered parasite on the human skin, the *Entozoon folliculorum*. He made himself familiar with varieties of skin diseases by extensive vacation rambles—in Switzerland and the Valais studying goitre, in Italy searching out ringworm cases among the peasantry, in the East making leprosy a special object of inquiry. He wrote the article "Skin" in Cooper's Surgical Dictionary, a Report on Leprosy, and many articles on various subjects connected with the specialty.

Thus Wilson became a specialist of great merit as well as profitable practice, and, says the *Lancet* (August 16, 1884), "knew more about skin diseases than any man of his time. He cured when others had failed to cure; and his works on dermatology, though they met with pretty searching criticism at the time of their appearance, have nearly all maintained their position as text-books. The horrible cases of scrofula,

anæmia, and blood-poisoning which he witnessed among the poor of London—they are happily rarer now than they were half a century ago—enlisted his warm sympathies. But he had to deal with rich patients as well as poor, and over these the masterful stamp of his mind enabled him to exercise despotism in matters of diet. Wilson was not only a consummate dietician, but he knew how to make his patients submit to have their bodies placed under martial law." He in fact largely viewed skin diseases as expressions of internal derangement and constitutional defects. He was continually on the look-out for deficiency of nutrition in children and remedying it.

Wilson was much pleased to be the means of bringing forward a little work on "Infant Life: its Nurture and Care," written anonymously by a lady, and first published in his "Journal of Cutaneous Medicine." In the preface which he wrote to it he expresses his strong beliefs that hygiene is the first necessity of a scholastic institution, that with proper nurture almost all the diseases of infants would be extinguished, that illness following vaccination properly performed can only occur owing to neglect of proper nurture and care, and that "healthy children never suffer, never die from vaccination."

An incident which brought Erasmus Wilson prominently before the public was the inquest held at Hounslow on a soldier who had died after a regimental flogging. Mr. Wakley held the inquest, which lasted

eleven days. It was in a great measure owing to Mr. Wilson's decided evidence that a verdict was returned declaring that the flogging had been the cause of death. The public feeling was aroused, a Parliamentary inquiry was subsequently held, and the punishment of flogging was at last removed from the regimental code.

Several works of considerable merit made Wilson's name very widely known. One of the most popular of these was entitled "Healthy Skin," first published in 1845. It strongly advocated that constant use of the bath which has become far more prevalent than when it was first issued. A translation of Hufeland's "Art of Prolonging Life," which he edited, appeared in 1853. In "The Eastern or Turkish Bath," in 1861, Wilson gave a powerful impetus to the establishment and spread of the Turkish bath in England, and laid down principles and plans of procedure calculated to make this bath safe for persons of very varied constitutions.

In 1869 Erasmus Wilson founded at his own cost a museum and professorship of dermatology at the College of Surgeons, with an endowment of £5000, and was appointed the first professor. In this capacity he lectured for nearly ten years. Several successive series of lectures were published, as well as a catalogue of the museum. He was also the founder of the Chair of Pathology in Aberdeen University. He also endowed a pathological curatorship at the College of Surgeons. He was elected on the Council of the

College in 1870, and was President in 1881. A special grant of an honorary gold medal was made to him by the College in 1884, just before his death.

His early Eastern travels had particularly interested Wilson in Egyptology, and he became by wide reading and study very competent in Egyptian lore, as is evidenced by his "Egypt of the Past," published in 1881. His munificence in connection with the bringing of the obelisk known as "Cleopatra's Needle" to London in 1877–8 is a familiar story. Many abortive proposals had been made to secure its being brought to England, but Government had always failed to make any arrangement. General Sir James Alexander was the means of starting the idea in Erasmus Wilson's mind, by speaking to him of a project for raising sufficient money by a general subscription. Wilson, who was greatly interested, thought the sum needed, £10,000, would not be forthcoming, and undertook to pay the entire sum himself, Mr. John Dixon, C.E., having undertaken its successful transport. Thus Britons will ever owe to him the possession of this choice treasure of Egyptian antiquity. The book entitled "Cleopatra's Needle: with Brief Notes on Egypt and Egyptian Obelisks," which Wilson brought out in 1877, went through several editions.

But these were only a few of the public objects to which Erasmus Wilson devoted his wealth, which had been vastly increased by singularly skilful investments in gas and railway companies' shares. He restored

Swanscombe Church, near his birthplace, in 1873. He founded, at a cost of £2500, a scholarship at the Royal College of Music, besides contributing considerably to its general funds. He was a large subscriber to the Royal Medical Benevolent College at Epsom, and built at his own cost a house for the head-master; further, he built at a cost of £30,000 a new wing and chapel for the Sea-Bathing Infirmary at Margate, in which skin diseases are largely treated. He was a strong Freemason, and contributed liberally to various Masonic charities. In recognition of his many public benefactions he was knighted in 1881.

"From his earliest life," says the *British Medical Journal* (August 16, 1884), "he was characterised particularly by his kindliness and gentleness of manner, which made him many friends; indeed, to know him was to love him. His generosity to poor patients who came to consult him was very great, not only prescribing for them gratis, but supplying the means for carrying out the treatment, and that not only after he became wealthy, but even at a time when he could ill afford to be generous. The amount of good he did privately will probably never be known, as he was one of whom it may truly be said, that he never let his left hand know what his right hand did—so unostentatious was he in regard to his charity."

Sir Erasmus Wilson had been in ill-health for two years before his death, and for a year was quite blind, yet never lost cheerfulness. On July 23, 1884, he was

at the consecration of St. Saviour's Church at Westgate on Sea, of which he had laid the foundation-stone a year before. Within three days he became seriously ill, and died on August 7th. He had married in 1841 a Miss Doherty, who survived him. He left no family, and the bulk of his property, something like £180,000, reverts on Lady Wilson's death to the College of Surgeons, without any restriction as to the disposal of the fund. Other legacies of £5000 each he bequeathed to the Sea-Bathing Infirmary at Margate, the Medical Benevolent College, and the Society for the Relief of the Widows and Orphans of Medical Men. Such bequests alone would place a man among great public benefactors. Wilson had not waited till death came before he became beneficent, and if his gifts are used in the spirit in which he gave them, he will rank with John Hunter as to the material if not the intellectual legacy he has bequeathed to mankind.

Descended from an old Scotch family (the Mackenzies of Scutwell), Dr. MORELL MACKENZIE is the son of the late Mr. Stephen Mackenzie, surgeon, of Leytonstone, by his wife Margaret, daughter of Mr. Adam Harvey of Lewes. Morell Mackenzie was born at Leytonstone, on the borders of Epping Forest, on the 7th July 1837. His father was a man of exceptional intellectual power, whose studies took the direction of metaphysics and mental diseases; hence he acquired great skill in treating nervous affections which border on insanity. His

ability was testified to by Mr. Brudenell Carter in his valuable essay on Hysteria (see p. 268). Mrs. Mackenzie was a clever woman of a highly practical tendency. The untimely death of Stephen Mackenzie in 1851, when he was thrown out of his gig and killed on the spot, left his widow with nine children very slenderly provided for.

Morell Mackenzie was educated by Dr. Greig of Walthamstow, many of whose pupils entered the service of the East India Company. Mackenzie always took a great interest in natural history, in which he was largely encouraged by his mother, and from an early period greatly desired to enter the medical profession. But a medical education being then beyond the means of the family so suddenly bereaved, he was placed at the age of sixteen in the office of the Union Assurance Company in Cornhill. Here he got on very well, but never abandoned the hope of becoming a doctor. Fortunately, by the kind aid of a relative, he was enabled to gratify this desire, and he accordingly resigned his clerkship, and became a student at the London Hospital.

On commencing his medical studies Mackenzie determined to take his degree at the University of London, combining with his hospital work the preparation for matriculation. Having become a member of the College of Surgeons in 1858, he subsequently took the M.B. degree with high honours in three subjects. At the London Hospital he obtained the senior gold

medal for surgery, and the gold medal for zeal, talent, and humanity to the patients, awarded by the governors. On leaving the hospital he went to Paris, where he studied for a year under Trousseau, Nélaton, Ricord, and others. He spent another year in Vienna, where he studied pathology under Rokitansky, chest diseases under Skoda, skin affections under Hebra, and diseases of the eye under Arlt and Jäger. During his stay at Vienna Mackenzie made an expedition to Pesth in order to become acquainted with the laryngoscope, an instrument invented by Manuel Garcia, which Czermak was then beginning to use. A friendship sprang up between these two men which only terminated with Czermak's lamented death. Czermak was very desirous that Mackenzie should translate some of his papers and publish them in the English medical journals, but he had determined to study for a few months in Italy, and before he returned home Czermak had himself come over to London and introduced the laryngoscope into England. On arriving in London Mackenzie was at once appointed Resident Medical Officer at the London Hospital, and shortly afterwards Registrar to that institution. He now began to make daily studies with the laryngoscope, and soon published cases in the medical journals which had been treated by its aid. In 1862 he completed the M.D. degree at London University.

In 1863 the Jacksonian prize for an essay on the Diseases of the Larynx was awarded to Mackenzie by

the Royal College of Surgeons, and on the urgent advice of many of his medical friends, especially that of the late Dr. Herbert Davies, he determined to make throat diseases a specialty, and having established himself in practice in the West End, he was largely instrumental in founding the Throat Hospital in King Street, Golden Square, in the same year. In 1866 Dr. Mackenzie was appointed Assistant Physician to the London Hospital, and his colleagues subsequently offered to recommend to the committee of that institution that a department for throat diseases should be established under his supervision. This however he declined, on the ground that he wished to treat diseases of every kind whilst attached to the London Hospital. He, however, gave a course of lectures on Throat Diseases at the London Hospital Medical College, whilst he also lectured on Physiology for three years. Dr. Mackenzie was afterwards obliged, owing to his increasing practice, to resign his connection with the London Hospital.

Dr. Mackenzie has for many years occupied a prominent position not only as a specialist but as a champion of specialism, and has exhibited considerable persistence in his advocacy of any cause with which the interests of specialism were connected. Some years ago, when most of the special hospitals were excluded from participation in the London Hospital Sunday Fund, Dr. Morell Mackenzie led the attack upon the position taken up by the committee, with the result that the treasurer of the Fund resigned, and

a modification of procedure took place. Dr. Mackenzie, among the other honorary memberships of foreign societies which have been conferred upon him, is one of the two honorary Fellows of the American Laryngological Association, Signor Garcia being the other. He has invented a number of instruments or modifications of instruments for the treatment of throat diseases, and has written copiously on the subject. His principal works are entitled "On the Use of the Laryngoscope in Diseases of the Throat," "Essays on Throat Diseases," "Diphtheria," "Hay Fever," and "Diseases of the Throat and Nose." He has also written the article on Diseases of the Larynx in Reynolds's "System of Medicine."

Dr. Morell Mackenzie claims that his experience as to diseases of the throat amply justifies and necessitates specialism. "The scientific literature relating to these," he says (*Fortnightly Review*, June 1885), "dates from little more than twenty-five years back, and already it has grown to a bulk that would surfeit the voracity of the most persevering bookworm, and it goes on increasing and multiplying in a manner that makes one long for a Malthus to preach some degree of moderation to its producers. Every week, every day brings one books, pamphlets, articles, lectures, reprints about all sorts of uncomfortable things in *itis* and *osis*, as seen in the throats of Englishmen, Frenchmen, Germans, Italians, Danes, Russians, Americans, and all the other offspring of Babel. A certain proportion of these, no doubt,

are of great value, but not a few might be consigned to the wastepaper basket without serious loss to science; all must be read, however, lest some grains of wheat should be thrown away with the chaff. Several periodicals dealing exclusively with diseases of the throat appear with praiseworthy regularity; and there are also societies, associations, &c., founded for the same purpose, each of which, of course, issues its yearly volume of Transactions. . . . This may give some faint idea of the herculean labour which the specialist who wishes to keep abreast of the progress of knowledge in his own subject from the literary point of view alone has to undergo; and it must be remembered that in medicine reading is after all only subsidiary to the practical work by which skill is perfected and experience gathered and extended."

The subject of animal parasites upon and in the human body, while certainly not one of the most attractive on a superficial view, has yet been found to yield scientific material of the highest interest, and has required great energy and care to produce satisfactory results. Among British workers in this field none is more widely known than Dr. THOMAS SPENCER COBBOLD, F.R.S.

Dr. Cobbold is the third son of the late Rev. Richard Cobbold, rector of Wortham, Suffolk, the author of the striking "History of Margaret Catchpole," and his grandmother, Mrs. Cobbold, was a zealous geological

collector in the early days of geology, having a fossil species of mollusc (*Nucula Cobboldiæ*) named in her honour. The subject of this notice was born at Ipswich in 1828, and educated for some years by the Rev. H. Burrows, at Yarmouth, and afterwards at the Charterhouse.

Young Cobbold entered upon the study of medicine at the Norfolk and Norwich Hospital in 1844, as pupil of Mr. Crosse, F.R.S. Later he proceeded to Edinburgh, and became class-assistant to Professor Hughes Bennett, and prosector to Professor Goodsir, then at the height of his career. Such men, and especially Goodsir, exercised a great awakening influence on young Cobbold, and deepened his strong tendencies towards anatomical research. In 1851 Dr. Cobbold graduated on the same day as Dr. Burdon-Sanderson, now Waynflete Professor of Physiology at Oxford, and the late Dr. Charles Murchison, all three being gold-medallists. After studying for some time in Paris, Dr. Cobbold on his return to Edinburgh was appointed curator of the Anatomical Museum, and became active in dissecting specimens of animals received at the museum. Among others his memoir on the giraffe and other ruminants formed the basis of his article Ruminantia, contributed to Todd and Bowman's Cyclopædia of Anatomy and Physiology. When the lamented Edward Forbes was elected to the chair of Natural History, Dr. Cobbold's attention was powerfully attached to geology, and for some years he made

excursions with his class, and collected large numbers of fossils. More distant excursions to Arran, the Yorkshire and Devonshire coasts, the Isle of Wight, &c., supplied Dr. Cobbold with specimens of great service in illustrating the Swiney Lectures, which he afterwards delivered for five years with marked success at the British Museum and at the Royal School of Mines (1868–72). So popular did these lectures become that towards the close of the last course many of the visitors could not find seats.

After the death of Edward Forbes, Dr. Cobbold resigned his appointments in Edinburgh, and became Lecturer on Botany at St. Mary's Hospital. Two years later he transferred his services to the Middlesex Hospital, lecturing there for thirteen years on Zoology and Comparative Anatomy. During his connection with the Middlesex Hospital he took up the branch of zoology and medicine with which his name will be most distinctively associated. During three successive years he examined the bodies of animals dying at the Zoological Gardens, especially with a view to discovering the presence of parasitic worms in them. Many papers were contributed by him to the Linnean and Zoological Transactions and Proceedings, among which we may call attention to "Remarks on all the Human Entozoa" (Zool. Soc. Proc., 1862).

In 1864 Dr. Cobbold was elected F.R.S., and in the same year published his "Introductory Treatise on the Entozoa," which established his reputation, the

*Lancet* declaring that it formed a noble contribution to medical science and a credit to our national literature. Up to the year 1865 Dr. Cobbold persevered in the pursuit of pure science, refusing all inducements to practice; but finding that after his twenty years of zealous labour, no suitable scientific post opened for him, he at length commenced practice in Wimpole Street, removing later to Harley Street. Here his great knowledge of the habits and treatment of internal worm parasites became available for professional purposes, and his services were largely sought. But scientific pursuits and public lecturing still claimed his attention, and among the achievements of his later years are his book on Tapeworms, which has gone through several editions; his lectures on practical helminthology, entitled "Worms;" a manual of the "Parasites of the Domesticated Animals," a larger treatise on Parasites, a smaller supplementary work on Human Parasites. In 1873 Dr. Cobbold received the appointment of Professor of Botany at the Royal Veterinary College, and soon afterwards a special chair of helminthology was established for him at the College, for giving instruction on the parasites and parasitic diseases of domesticated animals to veterinary students. In connection with this work Dr. Cobbold went still more deeply into the parasitic diseases of domestic animals, such as those which caused grouse disease, ostrich and pigeon epidemics, gapes in chickens, &c. He delivered a course of lectures on the "Parasites of

Animals employed as Food" at the Society of Arts. He has been the first to describe many new species of internal worms from elephants, horses, cattle, sheep, and dogs. One of the most elaborate of his special memoirs is that in which he has described the parasites of elephants, in the Linnean Society's Transactions. With these extensive researches in comparative anatomy, Dr. Cobbold has not neglected human parasites of late years, and various papers and lectures of his have commanded much attention and elucidated important points. He contributed fifty short articles on these subjects to Quain's "Dictionary of Medicine." As a lecturer Dr. Cobbold's style is highly popular and pleasing. He possesses to a great degree the power of putting himself on good terms with his audience and keeping them interested. His position in regard to the investigations with which his life has been chiefly occupied has been quite unique.

An extract from his work on Entozoa is an interesting example of a very successful mode of treating this subject. "The happiest, and perhaps after all the most truly philosophic, way of studying the entozoa, is to regard them as a peculiar fauna, destined to occupy an equally peculiar territory. That territory is the widespread domain of the interior of the bodies of man and animals. Each animal or "host" may be regarded as a continent, and each part or viscus of his body may be noted as a district. Each district has its special attractions for particular parasitic forms; yet,

at the same time, neither the district nor the continent are suitable localities as a permanent resting-place for the invader. None of the internal parasites 'continue in one stay;' all have a tendency to roam; migration is the very soul of their prosperity; change of residence the *sine quâ non* of their existence, whilst a blockade in the interior, prolonged beyond the proper period, terminates only in cretification and death."

## CHAPTER XXVI.

### *EMINENT SPECIALISTS—continued.*

*SIR W. BOWMAN, BRUDENELL CARTER, AND EYE DISEASES. TOYNBEE, HINTON, AND EAR DISEASES.*

THE eye, the organ of light, was, till recent times, practically a dark chamber. Only its grosser movements and the effects of its lenses upon the rays of light were understood. Its minute structure, its relationship to the brain, and the real nature of the morbid changes occurring in it, were hidden. To-day its microscopic elements are unravelled, and very much is known of their connexion with the great nerve-centres behind them. Experiment and calculation have gone far to settle the precise mode in which light gives rise to sight, and affects our perception and judgment of external objects, and the condition of the eye during life and health or disease has been brought into view by the ophthalmoscope. The names of Helmholtz and of Donders are inseparably connected with modern advances in the physiology of the eye, while no English name is more conspicuous in regard to the surgery of the eye than that with which we commence this chapter.

WILLLIAM BOWMAN, the third son of Mr. J. Eddowes Bowman, banker, of Nantwich, and afterwards of Welshpool and Wrexham, was born at Nantwich on July 20, 1816. He was early surrounded by scientific associations, for his father was a botanist and geologist of wide cultivation, having formed a very complete herbarium of British plants, and having furnished to Sir Roderick Murchison valuable original matter for his "Silurian System."

Mr. Bowman placed his son at Hazelwood School, Birmingham, which Sir Rowland Hill's father was conducting on the principle of the abolition of corporal punishment. The boys largely governed themselves, printing a magazine of their own. They were taught natural science too, a very unusual thing in those days. In such a congenial atmosphere young Bowman flourished, and in time became head boy.

An accident to one of his hands, about the close of his school course, seems to have led to Mr. Bowman's choice of surgery as a profession. For some months he saw country practice with Mr. T. T. Griffith, of Wrexham, seeing a good deal of cholera, which was then prevailing, and spending his leisure in copying anatomical drawings of the human bones and muscles. He then became, through the interest of Mr. Joseph Hodgson, F.R.S., afterwards President of the College of Surgeons, who had attended to his injured hand, a resident pupil at the General Hospital, Birmingham, where he continued for five years.

These early years were fruitful in microscopical observations of both healthy and diseased tissues, and even in experimental physiology, for Mr. Bowman was one of those whose advancement in science has been considerably due to experiments upon animals. In 1837, after a brief visit to the Dublin medical schools, he became a student at King's College, London, where Robert Bentley Todd had been lately appointed Professor of Physiology. Mr. Bowman's skill and extensive knowledge were soon made use of by Todd, and he was successively appointed prosector and demonstrator of anatomy and curator of the anatomical museum.

In 1838 Mr. Bowman visited the hospitals and museums of Holland, Germany, and Vienna, and made a considerable stay in Paris in 1841. Meanwhile his original studies were bearing fruit in important papers contributed to the Royal Society, "On the Minute Structure and Movements of Voluntary Muscle" (1840), "On the Contraction of Voluntary Muscle in the Living Body" (1841), and, "On the Structure and Use of the Malpighian Bodies of the Kidney" (1842). The latter marked a conspicuous advance in the physiology of the kidney, and Mr. Bowman was distinguished by receiving a royal medal for it, having been elected F.R.S. in the previous year. Professor Michael Foster, in his address on Physiology to the International Medical Congress of 1881, referred to these memoirs on muscle

and the kidney as "classic works, known and read of all instructed physiologists."

In 1840 Mr. Bowman, at the early age of twenty-four, was appointed Assistant-Surgeon to King's College Hospital. His scientific writing became much in demand. He wrote on Surgery in the "Encyclopædia Metropolitana," on Muscle, Motion, and Mucous Membrane in Todd's "Cyclopædia of Anatomy and Physiology," and took a large share with Dr. Todd in writing and illustrating the "Physiological Anatomy and Physiology of Man," which was brought out in parts. The desire to render this book as far as possible accurate and original by repeating most of the observations of others and making new ones where necessary, led to successive delays in the appearance of the parts. Finally the closing part was written by Dr. Lionel Beale, and published in 1856.

Having become a Fellow of the College of Surgeons in 1844, Mr. Bowman in 1846 joined the staff of the Royal London Ophthalmic Hospital, Moorfields, as assistant-surgeon, having already made extensive researches into the minute structure of all the organs of special sense. His advent to the Moorfields Hospital was marked by the delivery, in 1847, of a series of lectures on the "Parts Concerned in Operations on the Eye," which were afterwards separately published. It was evident that ophthalmic surgery had gained a distinguished recruit. Mr. Bowman had, independently of Brücke, discovered

the ciliary muscle, and his work brought forward numerous other facts of structure for the first time. His paper "On the Structure of the Vitreous Body," contributed to the *Dublin Quarterly Journal of Medical Science*, also attracted good attention. His suggestions on operations for artificial pupil in the *Medical Times and Gazette* also showed conspicuous capacity for ophthalmic surgery.

Although much urged to devote himself exclusively to this branch of practice, Mr. Bowman preferred to continue in general surgical practice for many years, attaining the surgeoncy to King's College Hospital in 1856, two years after he had reached the full surgeoncy at Moorfields. In 1848 he had been conjoined with Dr. Todd in the professorship of physiology and general and morbid anatomy in King's College, retaining the professorship, after Dr. Todd's retirement, in conjunction with Dr. Beale. But by 1855 Mr. Bowman found himself so fully occupied that he finally resigned the professorship. He held the surgeoncy to King's College Hospital till 1862.

From this period Mr. Bowman has been the acknowledged leader of ophthalmic practice. He was one of the first to employ the ophthalmoscope. His numerous papers in the Ophthalmic Hospital Reports and in the Medico-Chirurgical Transactions have given particulars of many improvements in operations on the eye, which he has adopted, introduced, or improved. Lachrymal obstructions, glaucoma, conical cornea, and

cataract are among the subjects he has specially dealt with; and he has by his clinical teaching and operative example contributed not a little to the building up of modern ophthalmic surgery. The well-earned honour of a baronetcy was conferred upon him in 1884.

The breadth of Sir William Bowman's sympathies is shown on the one hand by the active part he took in the establishment in 1848 of the St. John's House Sisterhood for training nurses for hospitals, families, and the poor, having joined its council from the beginning, and having materially assisted Miss Florence Nightingale in her various philanthropic nursing enterprises; and, on the other hand, by his consistent advocacy of physiological experiment. He considers that every step forwards in our knowledge of the healthy body must lead to a better understanding of disease and an improvement of our power of counteracting it, whether in the way of prevention, alleviation, or cure.

In his address to the British Medical Association at Chester in 1866,* this eminent authority took occasion to protest forcibly against the imputation of cruelty to animals sometimes made against medical men in respect of physiological experiments. He insisted both on the excessive difficulty of these original inquiries and the high motives which actuate physiologists and

* Reprinted by the Association for the Advancement of Medicine by Research, 1882.

the higher class of scientific inquirers. "There should be no doubt," said he, "as to the free allowance of dissections of living creatures for the advancement, and also for the communication, of a knowledge so indispensable for our race, and for every generation of it." He practically charged the opponents of vivisection with stopping the gates of knowledge, neither going in themselves nor suffering those that were entering to go in.

The lofty view which Sir William Bowman takes of the surgeon's function may be gathered from an extract from the above-mentioned address. "I see no reason to doubt that future ages will still accept the pious saying of one of old, that surgery is the *Hands of God;* the Human Hands, apt images and reflex of man's whole being, from his morning hour of puling helplessness, when the

> ". . . tender palm is prest
> Against the circle of the breast;"

through all his working day of time, until they shall be upraised once more at last in joy and adoration, to hail a brighter and an eternal dawning; the Human Hands, permitted now, through insight into God's laws, to be His instruments of succour to that earthly life and organisation which His power, wisdom, and love have first brought into being, still alone both sustain and cause to perish when their part is played; to that material organisation which dies every hour it lives, which indeed dies by living, and lives by dying, and

which wondrously transmits ever its own prerogatives and dark secrets to a succeeding life, destined apparently to remain a marvel and a mystery impenetrable to all generations."

The career of Mr. R. BRUDENELL CARTER is of special interest, owing to the fact that he was a general practitioner in the country till the age of forty, and came to London in 1868 without friends or connection, intending to establish himself as a specialist in eye diseases, and in a few years attained to eminence. But Mr. Carter's life had been previously marked by energy and success of no common order; and his literary tastes and accomplishments ranked in the forefront of the causes of his success.

A reference to Mr. Carter's ancestry will show that good hereditary influences met and combined in him. His father was a major in the royal marines; his grandfather, rector of Little Wittenham in Berkshire, was a younger brother of Elizabeth Carter, the well-known poetess and translator of Epictetus, whose portrait by Lawrence is in the National Portrait Gallery. The rector was entirely educated by his learned sister till he went to Cambridge. The rector's wife was a granddaughter of John Wallis, the mathematician and astronomer, one of the founders of the Royal Society. The Carters belonged to the younger branch of a family which had held the manor of St. Columb Major in Cornwall from the time of Henry VII.

Mr. Carter was born at Little Wittenham on October 2, 1828. After being at private schools he commenced his professional education by apprenticeship to a general practitioner, and afterwards entered at the London Hospital. After becoming a member of the College of Surgeons in 1851 he practised for a short time at Leytonstone and at Putney.

At this period Mr. Carter published his first work "On the Pathology and Treatment of Hysteria" (1853). This was avowedly based to a considerable extent upon the opinions and practice of Mr. Stephen Mackenzie, then recently deceased, who was extensively known by his successful treatment of the most inveterate hysterical disorders. This work in itself sufficiently indicated the presence of a writer possessing both clearness of view and moderation of statement.

This was followed by a much more extensive treatise "On the Influence of Education and Training in Preventing Diseases of the Nervous System" (1855). Mr. Carter was led to write it by observing the frequent connection between faulty education and nervous or mental disorders. It is divided into three parts, dealing respectively with the Nervous System, Physical Education, and Moral Education. The latter was that for the sake of which the book was written; it displays a thoughtful moderation and breadth of view, without, however, forecasting the author's future eminence.

Immediately upon the completion of this book Mr. Carter started for the Crimea, where he served with the

army as staff-surgeon. Returning home when peace was concluded, he settled in Nottinghamshire, and soon moving into the town of Nottingham, took an active part in the establishment of an eye hospital there. In 1862 he removed to Stroud in Gloucestershire, and founded an eye hospital in Gloucester. In 1864 Mr. Carter became Fellow of the College of Surgeons by examination.

In 1868 Mr. Carter took the important step of removing to London, resolving to rely upon medical and other literary work mainly until practice should come. Thus Mr. Carter has been the writer of very voluminous contributions to journalism, and has shown great ease and lucidity of style. In 1869 he was appointed Surgeon to the Royal South London Ophthalmic Hospital, and in 1870 Ophthalmic Surgeon to St. George's Hospital. He has persevered in commenting severely upon errors of modern education, and has especially dealt with evils done in various ways to the eyes in modern life. One pamphlet of his, "On the Artificial Production of Stupidity in Schools," has been often reprinted. In an address at the opening of the Medical Session at St. George's in 1873 Mr. Carter thus spoke of cramming: "The show pupils, who furnish marvellous answers to a multiplicity of questions, on a multiplicity of subjects, in response to the demands of various preliminary or matriculation examinations, remind me of nothing so much as of the wooden cannon which artillerymen call 'Quakers,' which require for their

production in unlimited numbers, besides the blocks of wood, nothing but a turning-lathe and a paint-brush; and which are mounted, to deceive the enemy, in embrasures that would otherwise be vacant. . . . But our 'competition wallahs,' instead of being used to deceive an enemy, have been used chiefly to deceive ourselves."

In 1875 Mr. Carter published an extended and important "Practical Treatise on Diseases of the Eye." In this he distinctly states that in its normal condition the eye has faults which would condemn a telescope or microscope to be thrown aside as useless, but which in the living organ are neutralised by the conditions under which it is exerted. He recommends any one who would operate upon the eye to take a great deal of preliminary trouble, and to train his hands to especial delicacy of action, so that he shall be indifferent which he uses. "It has more than once been my lot," he says, "to see attempts to operate upon the human eye made by a surgeon who did not even know how to hold the instruments he was about to misuse; and I can conceive few things more painful than such a spectacle." "In all ages and countries the bad workman has complained of his tools, and the good workman has produced the most varied results by the most simple means. A man who is very awkward, and whose awkwardness is perpetually bringing him to grief, hits upon a contrivance by which he hopes that this natural result may in some degree be obviated. He calls his contrivance an inven-

tion; and, like those persons of whom it is said that their glory is in their shame, he is often somewhat proud of it. Many surgeons of great and deserved repute have invented each a single instrument, such as Beer's knife or Tyrrell's hook; and some have invented more than one, chiefly because they have struck out some new procedure for which new appliances were indispensable. But as a rule the invention of many instruments by a surgeon may be accepted as a sufficient proof of his clumsiness; and when, without valid reason, any single operator has his peculiar scissors, and his peculiar hook, and his peculiar forceps, and his peculiar scoop, all called after his name, it is more than probable that the gift of fingers has not been bestowed upon him."

Mr. Carter in 1877 gave a course of lectures "on Defects of Vision which are Remediable by Optical Appliances," as Hunterian Professor of Pathology and Surgery at the College of Surgeons. These were published in the same year. He has since issued a more popular work, "Eyesight—Good and Bad: a Treatise on the Exercise and Preservation of Vision," 1880. The following extract has to do with a very injurious form of prejudice due to ignorance.

"The persons who suffer most from popular prejudice and ignorance on the subject of spectacles are men of the superior artisan class, who are engaged on work which requires good eyesight, and who, at the age of fifty or sixty, find their power of accomplishing such

work is diminishing. It is a rule in many workshops that spectacles are altogether prohibited, the masters ignorantly supposing them to be evidences of bad sight; whereas the truth is that they are not evidences of bad sight at all, but only of the occurrence of a natural and inevitable change, the effects of which they entirely obviate, leaving the sight as good for all purposes as it ever was." His general interest in education and its effects is abundantly manifested as in the description of the late Mr. C. Paget's half-time experiment at Ruddington near Nottingham, where garden work was substituted for about half the ordinary school hours of a portion of the scholars. The children so treated were found after a short period altogether to outstrip in their schoolwork those who devoted, or were supposed to devote, twice as much time to it.

Mr. Carter has translated two valuable works bearing on his specialty: viz., Zander on the Ophthalmoscope, and Scheffler on Ocular Defects. He has contributed to "Our Homes, and How to Make them Healthy," to the Sydenham Society's *Biennial Retrospect of Medicine*, and to many other publications.

Aural surgery has not long been raised to the rank of an honoured specialty. JOSEPH TOYNBEE was told on one occasion by an eminent member of the profession that he would make nothing of aural surgery. He replied, "I will work at it for ten years, and then if nothing can be made of it, I will tell you why."

On another occasion he said, "I'll rescue aural surgery from the hands of the quacks" (*Medical Times*, July 14, 1866). Prematurely cut off though he was, he added largely to the scientific knowledge of the ear and its maladies, and vastly improved their treatment.

JOSEPH TOYNBEE was born in 1815, at Heckington, in Lincolnshire, his father having been a large farmer. After being for some years under a private tutor at home, he went to King's Lynn Grammar School. At seventeen he was apprenticed to Mr. William Wade of the Westminster General Dispensary, Soho, and studied anatomy under Mr. Dermott. His assiduous and careful dissections were of essential benefit in preparing him for his lifelong minute dissections of the ear in health and disease. He further studied at St. George's and at University College hospitals. Even during his student life aural studies powerfully attracted him, and as early as 1836 several letters of his under the initials J. T. appeared in the *Lancet*. In 1838 he became a member of the College of Surgeons, and was selected as assistant-curator of its museum under Professor Owen. He obtained the Fellowship of the Royal Society in 1842 for researches demonstrating the non-vascularity of articular cartilage, the cornea, crystalline lens, vitreous humour, and epidermoid appendages, which were published in the Philosophical Transactions for 1841.

Toynbee early entered upon aural practice in Argyll Place, becoming also one of the surgeons to the St.

James's and St. George's Dispensary. He was included in the first list of Fellows of the College of Surgeons on the issue of its new charter. At the Dispensary he founded a Samaritan Fund for supplying the sick poor with necessaries of life and warmth. All sanitary matters were subjects of his profound interest, and he spent much time in improving the condition of things in the parishes around him, especially promoting means of securing adequate ventilation, and the erection of model lodging-houses near Broad Street, Golden Square.

Toynbee's practice gradually became very large, but he continued to dissect, and also to support administratively as well as pecuniarily many benevolent societies. He found that so little was really known of the diseases of the ear from actual dissection, that his only hope of framing a system of aural surgery was by personal and persevering examination and record of morbid specimens. This was carried on for more than twenty years, until he had dissected about 2000 human ears. Many of these were derived from his patients in the large Asylum for the Deaf and Dumb, whose condition he had examined previously to their death. Many medical men also supplied him with specimens of diseased ears, as well as notes of cases. He further inquired closely into the history of very many cases of patients with diseased ears.

In 1860 Toynbee published an extended work on "The Diseases of the Ear," which placed the subject on a firm basis, and will always remain of great value from

the interesting details of cases and treatment which it contains. The list of his own published papers on which it is based, about sixty in number, testifies to Toynbee's great industry in research. They include papers on the structure and functions of the tympanic membrane, on the muscles which open the Eustachian tube, and on the mode of conduction of sound from the tympanic membrane to the labyrinth of the ear, contributed to the Royal Society, many researches on the diseases of the ear in the Medico-Chirurgical Transactions, and a crowd of series of cases or special memoirs contributed to the Pathological Society and medical journals. In 1857 he had published a descriptive catalogue of the preparations illustrating diseases of the ear contained in his own museum.

On the establishment of St. Mary's Hospital, Mr. Toynbee was elected aural surgeon and lecturer on diseases of the ear; and he published in 1855 and 1856 courses of clinical lectures, which he delivered there. He took a deep interest in the condition of idiots, and of the deaf and dumb, and in many cases, to his great delight, devised plans by which those who were not totally deaf were taught to speak when their case had been regarded as hopeless, causing a corresponding improvement in their mental faculties.

Two of his most zealously pursued hobbies were ventilation, and the formation of local museums. It was said that patients who went to him for the benefit of their hearing, whether they improved in that respect

or not, came away full of the most advanced views on ventilation. At Wimbledon, where he took a country-house, he was indefatigable in developing a village club, and in forming an educative and recreative museum. He published valuable "Hints on the Formation of Local Museums" (1863), as well as "Wimbledon Museum Notes." His enthusiastic advocacy was actively engaged in furthering the establishment of similar clubs and museums in various parts of the kingdom. He continued through life an active microscopist and zoologist, and was elected just before his death President of the Quekett (Microscopical) Club. At the same time he was treasurer of the Medical Benevolent Club, to which he himself largely contributed.

One of Toynbee's most valuable contributions to the treatment of deafness was his invention of a method of forming an artificial tympanic membrane when that part had been destroyed or perforated. This is fully described in his pamphlet on the subject, which went through many editions, as well as in his general treatise. He first demonstrated the existence of many osseous and other tumours of the parts of the ear and of the ossicles of the tympanum, and also the fact that the Eustachian tube leading from the back of the throat into the tympanum remains always closed except during the momentary act of swallowing.

A premature end came to Toynbee's energetic and benevolent life. Always active in experimental re-

search, and much concerned in aural therapeutics, he experimented on himself with chloroform, and it is believed, prussic acid vapour, which he wished to cause to enter by the Eustachian tube into the tympanum for the relief of tinnitus aurium or noises in the ears. He unfortunately pursued his experiments while alone, and was found dead on July 7, 1866, in his consulting room at Savile Row, with a pad of cotton wool over his face, and chloroform and prussic acid bottles, his open watch, and various memoranda of experiments near him. His death excited universal sympathy for Mr. Toynbee's widow and nine children, with whom he had lived most happily.

If one great aural surgeon became a martyr of science, another was no less a martyr of philanthropy. The name of JAMES HINTON, which gained wide celebrity during his lifetime, has been progressively elevated since his death by the publication of his "Life and Letters," by Miss Ellice Hopkins, and of his works on "The Art of Thinking," 1879, "Philosophy and Religion," 1881, and "The Law-Breaker, and the Coming of the Law," 1884. Even yet, fortunately, much more may be hoped for, in the shape more especially of an autobiography, and of a work on Ethics.

It has become increasingly evident that James Hinton was, if not a true genius, a man who approached very nearly to that altitude of nature. As Mr. Shadworth Hodgson remarks in the introduction to the "Chapters

on the Art of Thinking," Hinton is a hander-on of Coleridge's torch, with less of systematic theology and more of emotional spiritualism. It is quite impossible to attempt here to sketch his various philosophical contributions. Indeed the time has not yet fully come to estimate them, their influence, or the man who gave birth to them. As an aural surgeon he perhaps scarcely rose to Toynbee's level, but this was rather because the greatness of his mind and soul in vaster fields overpowered him, than from defect of ability. An outline of his life and work only can here be given.

James Hinton was the third child (of eleven) of the well-known Baptist minister, John Howard Hinton, having been born at Reading in 1822. His father's mother was aunt to Isaac Taylor, the author of the "Natural History of Enthusiasm." It was from his mother, Eliza Birt, however, that James Hinton derived most. She is described as a fervent, lofty-souled woman, full of enthusiasm and compassion, yet dignified and able to rule others with mild but irresistible sway.

As a little child, James Hinton, though sweet-tempered, showed a strong tendency to investigate everything, and to rearrange the elder children's games "as they ought to be." The father taught the children to be keenly observant of natural history. The mother bred them up to have an instinctive feeling for religion, especially in its aspect of love to God. An elder

brother, Howard, died when James was but twelve, and this bereavement made such an impression upon him that he soon after was baptized and publicly received as a member of the Baptist Church.

At school James Hinton did not show special ability, though he had a remarkable verbal memory until a certain period, when he suddenly lost it without any special cause. In 1838 his father left Reading for London, becoming minister of the Devonshire Square Chapel. Feeling some pressure of circumstances with his large family, Mr. Hinton placed James in the first situation which presented itself, viz., that of cashier at a wholesale woollen-draper's shop in Whitechapel. This temporary immersion in proximity to some of the coarsest scenes imaginable had a very deep influence in educing the thoroughgoing altruism which afterwards characterised him.

After holding the Whitechapel situation about a year, and spending some time in search of a more suitable occupation, Hinton became a clerk in an insurance office in the city. Here, while not becoming an adept at book-keeping, he sat up at night and gave himself a miscellaneous education. At this time he has been described as "an abstract idea untidily expressed;" he was wholly indifferent to appearances, and his clothes could never be made to fit him; and he was often guilty of lapses from politeness. He was full of argumentativeness, and determined to get to the bottom of everything.

A little later his intense intellectual labours, combined with the deep sense he now and ever after entertained of the wrongs to which women were subjected, brought him into a state of mind in which he resolved to run away to sea. His intention being discovered, his father consulted a doctor about him, who wisely advised that he should enter the medical profession, as being more fitted to give scope for his mental powers. He was consequently entered at St. Bartholomew's Hospital at the age of twenty. He was able to perform his entire course of medical study with very great rapidity, and before taking his diploma went a voyage to China and back as surgeon of a passenger ship. On his return in 1847 he became a member of the College of Surgeons, and settled for a time as a surgeon's assistant at Newport in Essex.

He did not remain here long, but in the autumn of 1847 took the position of surgeon to a shipload of freed slaves who were to be shipped by voluntary agreement from Sierra Leone to Jamaica. He remained for more than a year after this in Jamaica, taking the practice of a medical man in ill-health, and looking after the progress of his late charges. In 1849–50 he travelled homewards by way of New Orleans, where he gained further insight into the slavery question. In 1850 he entered into partnership with a Mr. Fisher, a surgeon in general practice in Bartholomew Close; and became engaged to Miss Margaret Haddon, after an attachment of ten years.

In August 1850 we find the first note of his success in aural surgery; he cured his mother's deafness by a syringing properly performed. Some other cases of success followed this, and were very cheering. Soon after this he was introduced to Mr. Toynbee, and spent much time with him both at St. Mary's Hospital and privately. Yet he did not find anything in practice large enough to satisfy his aspirations. "Too many things crowd upon me; none *commands* me," he writes March 1851. "The thing which shall fill my heart must be not for myself but for others. To be contented I must toil not for comfort, nor money, nor for fame, nor for love, but for truth and righteousness."

In 1852 Hinton's marriage with Miss Haddon took place, one of singularly deep affection. He was now in practice for himself, finding general practice not very profitable, especially as he would not condescend to use arts to obtain success. He continued his study of aural surgery, and assisted Mr. Toynbee largely in the classification of his museum, already alluded to.

In 1856 Hinton published his earliest papers on physiology and ethics in the *Christian Spectator*. In 1858 he contributed an essay to the *Medico-Chirurgical Review* on "Physical Morphology," suggesting that organic growth takes place in the direction of least resistance—a conception utilised by Mr. Herbert Spencer in his "First Principles." In 1859 "Man and his Dwelling-place" was published and favourably received. Its success encouraged him to lay aside

practice, reduce his expenses to a minimum, and take to writing as a profession. He settled in a little house at Tottenham, where his sitting-room was of such dimensions that he used to say he could open the door with one hand, poke the fire with the other, and had nature given him a third, open the window with it, without rising from his seat.

At first success attended the venture. Thackeray accepted for the *Cornhill Magazine* the series of "Physiological Riddles," with the remark "Whatever else this fellow can do, he can write!" These were afterwards published, with others, under the title "Life in Nature." "Thoughts on Health" were also contributed to the *Cornhill*. But his mind continued in such activity of growth, ever full, ever changing, that he had not time to write his thoughts in form for publication, and he was forced back into practice, which he had not quite renounced, continuing to see a few aural patients twice a week at his father's house. In 1863 he was appointed aural surgeon to Guy's Hospital, and took a house in George Street, Hanover Square, for the purpose of aural practice. With heroic and costly resolution, knowing he could not adequately do his work as an aural surgeon and devote himself to philosophy, he locked his manuscripts away from his sight.

Henceforward he rapidly succeeded in practice. In 1866 he took the place vacated by the death of his valued friend Toynbee, removing to his house in Savile

Row. When in full practice, and not allowing himself to write, his chief life was in conversation. A few lines may be here quoted from Miss Hopkins' Life of Hinton. "It is difficult to give any adequate idea of the charms of Mr. Hinton's conversation to a mind at all in harmony with his own. His most marked peculiarity was the intensely emotional character of his intellect. Nature to him was no cold abstraction, no cunningly contrived machine made up of matter and force, but a mighty spiritual presence, a living being, tenderly and passionately beloved. The laws of nature were to him the habits of a dear and intimate friend. . . . But keen as was his delight in purely intellectual operations, he valued everything chiefly, if not only, in its relation to the moral. . . . How often, from some comparatively remote region of thought, or of art, would he flash down a light upon some practical matter, showing perhaps a neglected duty in its vital relations, or revealing an order in what looked like moral waste and confusion. Owing to this strong recognition of the spiritual unity of all life, never was there a man in whom the barrier between the religious and the secular was more completely effaced."

In 1869 his success in aural surgery was so assured, that an eminent surgeon suggested to Mr. Hinton that he might justifiably resume his philosophy as an evening recreation. So after six years' abstinence he resumed his writing. But his thoughts, allowed once more to spring into full activity, were certain to master him.

"Wherever he was, at a friend's house, in the street, at church, at a concert, he jotted down his notes on scraps of paper, backs of envelopes, bills, and programmes, writing them out in full in the evening." Finally, these thoughts were printed for his own private use, and from them a great portion of his posthumous works is derived.

At last he had made money enough by practice to retire. His parting gift to his profession was contained in "The Questions of Aural Surgery," a work of standard value; and his "Atlas of Diseases of the Membrana Tympani." In March 1874 he retired, but with a constitution deeply injured by over-work and excess of feeling and thought. His father had died the year before; his mother died in 1874. He continued incessantly working, writing, thinking, studying mankind in the streets and alleys of London, or in the colliers' cottages in South Wales, and came to suffer much from sleeplessness. When he set sail in the autumn of 1875 for the Azores, where Mrs. Hinton had preceded him, he was already seriously ill. At last he was seized with inflammation of the brain, and died on December 16, 1875, a martyr to his intense passion for the good of mankind. Of his intellectual, ethical, and religious views this is not the place to speak at large; his books must be left to explain themselves to kindred spirits.

## CHAPTER XXVII.

### *SIR R. CHRISTISON, SWAINE TAYLOR, AND POISON DETECTION.*

ALTHOUGH the detection of crimes of poisoning is but one of the departments of service which the medical profession is able to render to the law, yet it is one which has very largely attracted public attention, owing to the many awful aspects of death by poisoning, and the helplessness which mankind has always felt in regard to these crimes. Latterly the skill displayed in the detection of the existence of poisons after the death of the victims has set at rest many of the doubts as to the certainty of judgment in regard to poisoning, and the discovery of antidotes to many poisons has supplied a means of remedy in numerous cases before it is too late. It is obvious that these results could only begin to be realised when chemistry had made considerable progress; and consequently it was not till 1813 that a young doctor, the celebrated Orfila, published in Paris the first part of a treatise on Poisons, which was subsequently merged in his "Legal Medicine," 1821–3. The names most conspicuous in founding this new

department of investigation in Great Britain are those which stand at the head of this chapter.

ROBERT CHRISTISON, one of the twin sons of Alexander Christison, many years Professor of Humanity in Edinburgh University, was born at Edinburgh in July 18, 1797. After a complete education, in arts at the University, he finally chose the medical profession, and was for two years and a half resident assistant in the Royal Infirmary. Taking his M.D. degree in 1819, he spent the next eighteen months at St. Bartholomew's Hospital, London, and in Paris, where he worked in the laboratory of Robiquet at practical chemistry, and studied toxicology with Orfila himself.

When Dr. Christison was about to leave Paris, Dr Gregory's death led to a vacancy in the Chair of Medical Jurisprudence at Edinburgh, and Christison was proposed to fill it while still absent. It is significant of the state of knowledge that not one of the candidates besides Christison had any practical knowledge of chemistry. The influence of Lord Melville, however, who had been his father's resident pupil when young Christison was born, was the determining cause of his success in the election.

At first students were very few, not half-a-dozen attending the earliest course. Christison devoted himself with characteristic energy to make his chair a real influence in the university. And here we may

remark briefly on the extraordinary vigour of constitution which the new professor possessed, and retained almost till death. He could walk, run, or row better and with more endurance than any man of his time in Edinburgh, and that is saying a great deal. He made his new chair his primary object. Being an extremely neat and clean worker in the laboratory, his investigations soon became noted, and it was found, when he was called in to give evidence on matters of medical jurisprudence, especially in poisoning cases, that his mind was equally clear and accurate, and that he could give reasons for his beliefs which rendered his statements unimpeachable. From the famous trial of Burke and Hare in 1829 down to 1866 Dr. Christison appeared as a scientific witness in almost every case of medico-legal importance in Scotland, and in many in England.

"As a witness," says the *Scotsman* (Jan. 28, 1882), "he was remarkable for a lucid precision of statement, which left no shadow of doubt in the mind of court, counsel, or jury as to his views. Another noteworthy characteristic was the candour and impartiality he invariably displayed, and which, backed as it was by the confidence that came of mature deliberation, rendered him almost impregnable to cross-examination. This was notably illustrated in the celebrated Palmer trial. Some of the medical witnesses for the Crown had got so severely handled by the prisoner's counsel that the case seemed in danger of breaking

down, but Christison had not been long in the box when the lawyers found they had at last met one who was a match for the subtlest of them: and so complete was the failure of all their efforts to discredit his evidence, that the case, by the time he finished, had assumed the gravest possible complexion."

As a persevering experimentalist, Christison was daring even to rashness in making trials on himself. He thus tested the taste of arsenious acid, which was held by Orfila and most others to be rough and acrid, and which he proved to be rather sweet. He ate an ounce of the root of *Œnanthe crocata*, which had stood most poisonous in England and on the Continent; but the Scotch specimen at any rate did not poison Dr. Christison. A most striking risk was run in the case of the Calabar bean. He took a dose before going to bed, and found its effects resembled those of opium. Not satisfied, he took a larger dose next morning on rising, with the result of almost paralysing him. But he fortunately had a good emetic close at hand, a bowl of shaving water, and administering a large quantity, he was partially relieved. But much prostration remained, and medical assistance had to be summoned.

Christison's principal services to the literature of his subject consisted in his work on Poisons, which was first published in 1829, and went through several successive editions, and in numerous memoirs and papers contributed to medical and scientific journals, some of which detailed improved chemical processes

and tests for poisons, as those on "The Detection of Minute Quantities of Arsenic in Mixed Fluids," "On the Taste of Arsenic, and on its Property of Preserving the Bodies of Persons who have been Poisoned with it," and on the poisonous properties of numerous vegetable alkaloids.

In 1832 Christison, having raised his class to no fewer than ninety students, resigned his chair on appointment to that of Materia Medica, intending to become, in addition to a clinical teacher of medicine, an original investigator on the therapeutical action of remedies. But before he had got fully afloat in this, practice, for which he had not specially laid himself out, flowed in upon him, and prevented the realisation of his desire. He accumulated a fine museum of materia medica, and his lectures were very popular. But it cannot be said that he left his mark on medicine or therapeutics to the same extent that he did on toxicology.

Christison was eminently a lover of his university, and exceedingly conscious of its great merits. In numerous matters he was very conservative, and strongly resisted some modern views of pneumonia and fevers. He wielded great influence for many years in the administration of university matters. In 1838 and in 1846 he was President of the Edinburgh College of Physicians. From 1868 to 1873 he was President of the Royal Society of Edinburgh. From 1857 to 1873 he occupied a seat at the General Medical

Council. After having been for many years Physician in Ordinary to the Queen in Scotland, Dr. Christison received a baronetcy in 1871, on the recommendation of Mr. Gladstone. In the same year his bust by Brodie was presented to the university, by general subscription among the medical profession.

In 1872 Sir Robert Christison completed his fiftieth year of active service as professor in the university, the only case of the kind that had ever occurred; and a large and enthusiastic assembly entertained him at dinner. Further honours still awaited him; he was in 1875 elected President of the British Medical Association at its Edinburgh meeting; and in 1876 he was selected for the Presidency of the British Association, a distinction which however he declined on the ground of his advanced age. He soon afterwards retired from active duty; but lived in considerable vigour till about Christmas 1881. He died on January 23, 1882, in his eighty-fifth year.

"As regards his personal characteristics," says the *Scotsman*, "Sir Robert was perhaps liable to be somewhat misunderstood by those who did not know him. Dogmatic and positive in his opinions, he was inclined to lay down the law in a way that might not always be quite agreeable. . . . On the other hand, friends who had the good fortune to know him intimately found in his nature a fund of geniality such as the casual observer could never have dreamt of. Warmth of heart and simple unaffected kindness would seem to have been

distinguishing qualities of his private and social demeanour." He was a strong Churchman and Tory. He married in 1827 a Miss Brown, who died in 1849, leaving three sons.

Some years younger than Christison, ALFRED SWAINE TAYLOR was contemporary through life with him, and occupied for many years a quite exceptional position in the English mind in connection with the detection of cases of poisoning. He was born at Northfleet in 1806, and educated at Hounslow. At the early age of sixteen he became the pupil of a surgeon near Maidstone, and in October 1823 entered as a student at Guy's and St. Thomas's Hospitals, then forming a united medical school. Later on he was exclusively connected with Guy's as pupil and lecturer until his retirement in 1878.

From the year 1826 Taylor gave much attention to medical jurisprudence, although his diligence was such as to win for him a prize for anatomy at Guy's. Chemistry proved a congenial subject to him under the instruction of Allen and Aikin, and he was further stimulated in the same direction by frequent visits to Paris and all the principal Continental medical schools. At Paris he heard among others Orfila and Gay-Lussac. Geology, mineralogy, and physiology likewise engaged his attention, and so was formed a mind singularly broad in its views of natural phenomena, and well calculated to expound their laws. Taylor passed his examinations

at the Apothecaries' Hall in 1828 and at the College of Surgeons in 1830, and entered upon practice, continuing, however, to study in the chemical laboratory of Guy's Hospital.

In 1831, when the Apothecaries' Society first required candidates for their diploma to attend lectures on Medical Jurisprudence, Mr. Taylor was appointed to lecture on the subject at Guy's Hospital, a post which he continued to hold for forty-seven years. In the next year he succeeded Mr. Barry as co-lecturer on chemistry with Mr. Aikin, whose colleague he continued till 1851, after which he was sole lecturer on chemistry till 1870, when he resigned this lectureship. In these important functions Dr. Taylor acquitted himself admirably. He was exceedingly clear in his statements, exact and successful in his experiments, while yet very undemonstrative in manner.

In 1832 the new lecturer commenced his long series of memoirs bearing on poisoning, by publishing an account of the Grotto del Cane, near Naples, with remarks on suffocation by carbonic acid. This appeared in the *London Medical and Physical Journal.* In subsequent years he contributed important papers to Guy's Hospital Reports, on the action of water on lead, on poisoning by strychnia, on the tests for arsenic and antimony, &c., and was soon a recognised authority on medico-legal questions. He contributed to the *London Medical and Physical Journal* valuable memoirs on poisoning, child-murder, &c. In 1836 he published the

first volume of a work on medical jurisprudence which was not completed at that time. In 1842 he brought out his well-known "Manual of Medical Jurisprudence," which reached its tenth large English edition in 1879, in the author's lifetime, in addition to numerous American editions. The Swiney Prize of 100 guineas, together with a valuable silver vase for a work on Jurisprudence, were also awarded to him.

In 1848, when he became a member of the College of Physicians, Dr. Taylor published a work on Poisons which was at once accepted as standard, and has gone through several editions. In 1865 his large work entitled "The Principles and Practice of Medical Jurisprudence" appeared, including much matter for which there was not space in his manuals. This work attained its third edition in 1883, having been edited by Dr. Thomas Stevenson, his distinguished successor at Guy's Hospital.

But this represents only a portion of the literary labours of Dr. Taylor. From 1844 to 1851 he was the editor of the *London Medical Gazette*, afterwards incorporated with the *Medical Times*. He largely co-operated in editing various editions of Pereira's Materia Medica. He brought out in conjunction with Professor Brande a Manual of Chemistry in 1863, and in 1876 edited Dr. Neil Arnott's celebrated work on Physics. He was elected in 1853 Fellow of the College of Physicians, having had previously conferred upon him the honorary M.D. of St. Andrews University. He

was elected a Fellow of the Royal Society in 1845. He married in 1834 a Miss Cancellor.

It was as a medical witness in important legal cases that Dr. Swaine Taylor was most widely known. If a case of unusual character was before the courts, it came to be expected that he should be called as a witness, and for many years he was retained by the Treasury as their medical adviser on such cases. It is impossible here to refer to the numerous important cases of this character in which Dr. Taylor figured. A writer in the *Medical Times* for June 12 and 19, 1880 (pp. 642, 671), enters into this question from full knowledge, and describes him thus: "Personally Taylor was of a tall and imposing figure, gracious to friends and bitter to foes, and, as the lawyers found, a superb witness, not to be shaken by any light word of doctrine. . . . . There was a thoroughness about Taylor's work which was always satisfactory."

In regard to the celebrated Palmer trial, Dr. Taylor was severely cross-examined, and was contradicted in important points by experts called for the defence. In fact, it is possible that the case would have gone in favour of the prisoner but for the strong confirmation of the view of the prosecution given by Dr. Christison, to which we have already referred. Dr. Taylor expressed his strong views on this question in an extended pamphlet "On Poisoning by Strychnia," most of which appeared in Guy's Hospital Reports for 1856. He died on May 27, 1880.

## CHAPTER XXVIII.

### *PARKES, GUY, SIMON, AND PUBLIC HEALTH.*

"PREVENTION is better than cure" is the homely proverb which marks out a large proportion of the work of sanitary science. The prevention of disease and of its spread, and the promotion of the general healthiness of the people—these are objects which modern progress has brought into view. When they are completely attained we shall all die of old age unless cut off by accidents or violence; and this is a goal which many sanitarians of the present day have vividly before their mind.

The public health and the public welfare have been sought by no man more earnestly than by EDMUND ALEXANDER PARKES. Of him Dr. Russell Reynolds said:* "In the combination of moral, mental, and physical beauty, Dr. Parkes was to my knowledge never equalled, to my belief cannot be surpassed. Pure as a sunbeam, strong as a man, tender as a woman, keen as any scientist to unravel the hidden mysteries of life in its minutest detail of chemical

* See the *Lancet*, March 25, 1876, p. 481.

and physiological research, yet practical in the application of his knowledge to the cleansing of a drain or the lightening of a knapsack; he made the world much richer by his life, much poorer by his death."

Parkes was born on March 29, 1819, in the village of Bloxam, Oxfordshire, his father being Mr. William Parkes, of the Marble-yard, Warwick, "a man of superior mind, remarkable alike for industry, firmness, and nobility of character."* His mother, Frances Byerly, daughter of Mr. Thomas Byerly of Etruria, Staffordshire, was much occupied in literature, and her sister, wife of Professor A. T. Thomson of University College, London, was a well-known biographer and novelist.

Under such favouring influences young Parkes grew up a gentle but unusually merry and happy boy. After being educated at the Charterhouse, he entered as a medical student at University College, and spent much time in his uncle's laboratory, becoming an excellent manipulator, and already showing a fondness for research. At the first M.B. examination at London University in 1840 he was exhibitioner and medallist in anatomy, physiology, and chemistry, and medallist in materia medica. In 1841 at the final M.B. he was medallist in physiology and comparative anatomy, and gained honours in medicine. He had taken the College of Surgeons' diploma in 1840.

Of this period of Parkes's life Sir William Jenner, an intimate fellow-student at University College, says:

* *Medical Times and Gazette*, March 25, 1876, p. 348.

"As a student he was distinguished by brightness and cheerfulness, amiability, unselfish willingness to help others at any cost of trouble to himself, energy in work, diligence in the using of each hour for the studies of that hour, the high moral tone that pervaded his converse, and above all, and crowning all, by the real living purity of his being."

Early in 1842 Parkes entered the army medical service, and went as assistant-surgeon to the 84th regiment to Madras and Moulmein. Here he prosecuted inquiries which bore fruit in two small publications on the Dysentery and Hepatitis of India (1846), and on Asiatic and Algide Cholera (1847). But before this period he had retired from the army and entered upon practice in Upper Seymour Street, Portman Square, becoming further known as a physician by editing and completing Dr. Thomson's work on Diseases of the Skin (1850). This was only a portion of his literary and original work at this time, during which he contributed largely to the *Medical Times*, and from 1852 to 1855 edited the *British and Foreign Medico-Chirurgical Review*, for which difficult task he was exceedingly well fitted.

Having been appointed one of the physicians to University College Hospital, his influence was very marked, both on his students and his colleagues. One of his pupils, afterwards a distinguished physician, said that he never went round the wards with him without feeling an intense wish to become better, and at the

same time feeling that he could become so. In 1855 Parkes delivered the Gulstonian Lectures at the College of Physicians, taking the subject of Pyrexia, or the State of Fever.

During the Crimean War, when great pressure existed upon the hospitals at Scutari, Dr. Parkes was selected by Government to proceed to the seat of war to establish an additional large hospital. He fixed upon Rankioi on the Dardanelles, and his choice proved excellent. He worked most zealously to make everything as perfect as possible, and he accomplished much in spite of the red-tape which was so disastrously prominent in the war administration of that time. He did not in any way spare himself, though his constitution had shown serious signs of weakness in London when he had had severe attacks of pneumonia and phebitis. His report on the work of his hospital at the conclusion of the war was a most valuable one, and he gained the high esteem of Mr. Sidney Herbert, afterwards Lord Herbert of Lea.

One result of the Royal Commission of Investigation into the administration of the war was the foundation of the Army Medical School, and Mr. Herbert never showed better judgment than in selecting Dr Parkes to be Professor of Military Hygiene in connection with it. Consequently he gave up in 1860 his post at University College; he was appointed Emeritus Professor, and a marble bust of him was placed in the College museum.

Parkes found that in order adequately to teach the subjects involved in preserving and promoting the health of the army, he must not only study the special features of army life and the peculiar liabilities attaching thereto, but also the general science of hygiene, then almost new. He organised at the cost of immense labour a detailed system of instruction, based on the principle of making the student apply practically what he taught. All the special questions which came up relating to air, water, food, temperature, clothing, house construction, drainage, &c., were as far as possible illustrated in the laboratory, and individual instruction was most carefully given.

In 1864 was published the first edition of Parkes's "Manual of Practical Hygiene," a masterly book, accurate, learned, clear, full, and of the highest interest to the thoughtful mind. The introduction to this work opens with a clear definition of the subject. "Hygiene is the art of preserving health; that is, of obtaining the most perfect action of body and mind during as long a period as is consistent with the laws of life. In other words, it aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote."

Later he says: "It is undoubtedly true that we can, even now, literally choose between health and disease; not, perhaps, always individually, for the sins of our fathers may be visited upon us, or the customs of our life and the chains of our civilisation and social customs may gall us, or even our fellow-men may

deny us health, or the knowledge which leads to health. But, as a race, man holds his own destiny, and can choose between good and evil; and as time unrolls the scheme of the world, it is not too much to hope that the choice will be for good." He further powerfully indicates the basis of state medicine, to secure for all individuals the conditions of health which they often cannot secure for themselves. He shows too that self-interest, state-benefit, and pecuniary profit are at one in these matters when rightly understood. "It is but too commonly forgotten," he says, "that the whole nation is interested in the proper treatment of every one of its members, and in its own interest has a right to see that the relations between individuals are not such as in any way to injure the well-being of the community at large." It is almost needless to add that numerous editions of Parkes's Practical Hygiene have been called for; it has also been translated into several foreign languages.

We have enumerated, however, but a small portion of the subjects upon which Parkes's unceasing philanthropic activity was exercised. For many years he wrote an annual review of the Progress of Hygiene, contributed to the Army Medical Reports. He served on many public inquiries relating to matters of health, and did more for the diminution of mortality in the army than any other man. He carried on many protracted and difficult physiological investigations, such as those on the effects of diet and exercise, on the

elimination of nitrogen, on the effects of alcohol on the human body, on the effects of coffee, extract of meat, and alcohol on men marching, chiefly contributed to the Royal Society. As a member of the Senate of London University, and of the General Medical Council, and as Secretary to the Senate of the Army Medical School, he performed detailed work of the highest value, and all in spite of delicate health.

"With increase of years," says Sir William Jenner,* "his mind ripened, his sphere of action widened, his influence over others operated in new and perhaps more important ways; but in all moral and intellectual essentials Dr. Parkes was as a man what he was as a youth —he was animated by the same principles and stimulated by the same faith. As years went on his mind proved itself to be singularly well balanced; he possessed an extraordinary power of acquiring information; his memory was very retentive; he was the best-informed man in the medical literature of the century I ever met; he was unprejudiced as he was learned; he could use with ease the information he acquired, and could express his ideas clearly and simply; his language was always elegant, and on occasions eloquent. His powers of observation, of perception, of reasoning, and of judgment were all good, and equally good. But as in his youth, so in his manhood, the beauty of his moral nature, his unselfish loving-kindness, his power of inoculating others with his own love of truth,

* *Lancet*, July 8, 1876, p. 41, supplement to Harveian Oration.

with his own sense of the necessity of searching for the truth, of questioning nature till she yield up the truth, of earnest work, were his most striking characteristics."

At last the seeds of weakness which were constitutional in Parkes developed into acute tuberculosis, and he died on March 15, 1875, after an illness of four months. His domestic life had been a very happy one, but his wife, a Miss Chattock, whom he married in 1851, had died in 1873, and he was much broken by her loss. He left no children. His monument is in the Parkes Museum of Hygiene, which enforces eloquently the lessons of his life.

Dr. WILLIAM AUGUSTUS GUY, F.R.S., is one of the most eminent of modern promoters of the public health. He was born at Chichester in the year 1810, his ancestors for three generations having been medical practitioners there. His grandfather, William Guy, was a pupil of John Hunter, and in Hayley's life of Romney it is stated that "Cowper said of him that he won his heart at first sight, and Romney (who painted his portrait) declared that he had never examined any manly features which he would sooner choose for a model if he had occasion to represent the compassionate benignity of the Saviour." *

After a childhood spent with this estimable grandfather, young Guy was educated at Christ's Hospital,

* See Photographs of Eminent Medical Men, ii. 59.

and later studied for five years at Guy's Hospital. Winning the Fothergillian medal of the Medical Society of London for the best essay on Asthma, in 1831, at the early age of twenty-one, he was encouraged to enter at Cambridge, where, after a further period of two years spent at Heidelberg and Paris, he took his M.B. degree in 1837.

In 1838 Dr. Guy became Professor of Forensic Medicine in King's College, London, and later Assistant-Physician to King's College Hospital. He early directed his attention to statistics, and joined the Statistical Society in 1839, and became one of its honorary secretaries in 1843. In 1844 he contributed important evidence before the Health of Towns Commission, on the state of the London printing-offices, and the consequent development of pulmonary consumption among printers. He co-operated in founding the Health of Towns Association, and has been incessantly occupied in public lectures, investigations, and writings, in calling attention to questions of sanitary reform. He has been notably concerned in the improvement of ventilation, the utilisation of sewage, the health of bakers and soldiers, hospital mortality, and many other like subjects. In 1873 he was President of the Statistical Society, and he has successively been Croonian, Lumleian, and Harveian Lecturer at the College of Physicians. His various publications and papers are too numerous to recount. We may, however, mention the "Principles of Forensic Medi-

cine," and successive editions of Hooper's "Physicians' Vade Mecum."

Mr. JOHN SIMON, C.B., F.R.S., is one of the veterans of the present day in matters of public health, besides having the highest reputation as a surgeon and pathologist. Born in 1816, Mr. Simon was a student of King's College, London, and was elected a fellow of the College of Surgeons in 1844. He was appointed in 1847 lecturer on Pathology at St. Thomas's Hospital. His subsequent researches and writings, especially those on Inflammation, have proved his great fitness for the post. In 1850 he published a very original course of lectures on General Pathology, as conducive to the establishment of Rational Principles for the Diagnosis and Treatment of Disease.

Mr. Simon's career in connection with public health began with his being appointed the first Medical Officer of Health to the City of London. He was before long selected as medical adviser to the General Board of Health, and was thence transferred to the important post of medical officer to the Privy Council. In this capacity his labours, ably seconded by a crowd of zealous workers, have been of priceless value to the nation at large. The successive annual reports published by the Privy Council sufficiently attest this.

In his first report to the Privy Council, Mr. Simon stated "that more than half of our annual mortality results from diseases which prevail with a very great

range of difference in proportion as sanitary circumstances are bad or good; that, according to the latest available evidence, some of these diseases prevail twice or thrice, some of them ten or twenty times, some of them even forty or fifty times, as fatally in some districts as in other districts of England; that the result of their excessive partial development is to render the mortality of certain districts from 50 to 100 per cent. higher than the mortality of other districts, and to raise the death-rate of the whole country 33 per cent. above the death-rate of its healthiest parts."

In his eleventh report Mr. Simon was able to write as follows: "It would, I think, be difficult to overestimate, in one most important point of view, the progress which, during the last few years, has been made in sanitary legislation. The principles now affirmed in our statute-book are such as, if carried into full effect, would soon reduce to quite an insignificant amount our present very large proportions of preventable disease. . . . Large powers have been given to local authorities, and obligation expressly imposed on them, as regards their respective districts, to suppress all kinds of nuisance, and to provide all such works and establishments as the public health primarily requires; while auxiliary powers have been given for more or less optional exercise in matters deemed of less than primary importance to health. . . . The State . . . has interfered between parent and child . . . between employer and employed . . . between vendor

and purchaser; has put restrictions on the sale and purchase of poisons; has prohibited in certain cases certain commercial supplies of water; and has made it a public offence to sell adulterated food, or drink, or medicine, or to offer for sale any meat unfit for human food. . . . Its care for the treatment of disease has not been unconditionally limited to treating at the public expense such sickness as may accompany destitution; it has provided that in any sort of epidemic emergency, organised medical assistance, not peculiarly for paupers, may be required of local authorities; and in the same spirit requires that vaccination at the public cost shall be given gratuitously to every claimant."

Mr. Simon has been a distinguished surgeon to St. Thomas's Hospital, and attained some years ago the Presidency of the College of Surgeons. He is also a member of the General Medical Council. In 1878 his bust in marble was presented to the College of Surgeons by public subscription, in recognition of his eminent services in sanitary science.

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